POS-761F

Socket 370 SBC for POS, Kiosks and Gaming applications

User's Manual

Acknowledgements

For more information on this and other Advantech products, please visit our websites at: **http://www.advantech.com**

http://www.advantech.com/ppc

For technical support and service, please visit our support website at:
http://support.advantech.com

This manual is for the PPC-123.

Part No. 2007076110

1st Edition, Feb. 2003

FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user's manual, it may cause harmful interference to radio communications. Note that even when this equipment is installed and used in accordance with this user's manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If interference is occurring, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Warning!

Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.

Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 POS-761F all-in one single board computer
- 1 CD-ROM or disks for utility, drivers, and manual (in PDF format)
- 1 warranty certificate
- 1 UDMA 66 40-pin flat cable
- 1 startup manual
- 2 serial port cables
- 1 audio cable (optional)

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Additional Information and Assistance

Step 1. Visit the Advantech web site at **www.advantech.com** where you can find the latest information about the product.

Step 2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Wichtige Sicherheishinweise

1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die NetzanschluBsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daB diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim. AnschluB an das Stromnetz die AnschluBwerte.
9. Verlegen Sie die NetzanschluBleitung so, daB niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von authorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
    a - Netzkabel oder Netzstecker sind beschädigt.
    b - Flüssigkeit ist in das Gerät eingedrungen.
    c - Das Gerät war Feuchtigkeit ausgesetzt.
    d - Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
    e - Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
    f - Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. VOSICHT: Explisionsgefahr bei unsachgemaben Austausch der Batterie.Ersatz nur durch densellben order einem vom Hersteller empfohlenemahnlichen Typ. Entsorgung gebrauchter Batterien navh Angaben des Herstellers.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weiger.

DISCLAIMER: This set of instructions is given according to IEC704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Caution! *Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.*

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CHAPTER 1

General Information

This chapter gives background information on the POS-761F.

Sections include:

- Sections include:
- Introduction
- Features
- Specifications
- Board layout and dimensions

Chapter 1 General Information

1.1 Introduction

The POS-761F utilizes an LPX form factor (Socket 370) design that supports Celeron processors and Pentium III processors up to 1.26 GHz Tualatin code CPU at 133 MHz FSB bus. This effective LPX Socket 370 solution gives end users the choice of good, economical performance with the Celeronô series processors, or the impressive performance of the Pentium III series. Also, compared to Slot 1 solutions, the Socket 370's lower profile allows for a lower board height, critical to embedded systems applications. This processor flexibility combined with all the other on-board features, explains why the POS-761F is the new top-of-the-line POS solution at Advantech.

The POS-761F is loaded with special on-board features that rival full-size systems. It has standard 10/100Base-T PCI Ethernet, 36-bit DSTN/TFT LCD panel support as well as SSD support for DOCÆ 2000 and CompactFlashô. There is a Mini PCI socket for optional international version modem, plus optional support for AC97 3D stereo surround sound with speaker-out, CD-input, line-in, line-out and microphone. The POS-761F also includes two 168-pin DIMM sockets for up to 1 GB total on-board memory.

The POS-761F was designed using feedback and knowledge gained from our customers. It has more of the features our customers have requested. It is 100% PC compatible and is ready to handle the most challenging POS environments. Besides the great onboard memory flexibility and capacity, the POS-761F has four on-board serial ports, each with +5/+12 V power, two USB connectors, watchdog timer and tough industrial grade construction. The Award 256 KB Flash BIOS supports Plug & Play, Boot from Ethernet, Boot from CD-ROM, Boot from Zip drive, Wake-on-Lan, Modem and LCD backlight turnoff. All these features make the POS-761F a very "system integrator friendly" solution, perfect for handling POS applications in the harshest unmanned environments.

1.2 Features

- All-in-one design simplifies system integration and increases system stability
- Socket 370 supports Celeron and Pentium® III processors, up to 1.26 GHz (Tualatin Code) oandabove.
- On-board POS features such as 4 x RS-232 with power and 4 x USB interfaces for external peripherals.
- 100/10Base-T with RJ-45 connection for the most demanding networking environment
- Supports Mini PCI interface for optional modem
- Supports wake-on LAN, modem
- 16-bit full-duplex 3D audio optional for quality multimedia sound applications
- Special industrial features not found on conventional motherboards include watchdog timer, SSD and High Drive digital I/O for driving cash drawer
- Standardized layout conforms to Western Digital LPM/LPX format for easy installation within standard sized chassis
- Supports up to 36-bit DSTN/TFT high resolution LCDs
- Advanced CPU switching power technology for stable and low heat CPU voltage power conversion
- Supports DiskOnChipÆ Flash modules and CompactFlash™ card

1.3 Specifications

Standard SBC functions

- **CPU:** Socket 370 for Intel® Celeron™/Pentium III Tualatin code processor
- **BIOS:** Award 256 KB Flash memory
- **Chipset:** VIA 8606/TwisterT, VT82C686B
- **System memory:** Two DIMM sockets accept 32 MB ~ 1 GB SDRAM
- **Enhanced IDE interface:** Supports up to four EIDE devices. BIOS auto-detect, PIO Mode 3 or Mode 4, UDMA/33 transfer, UDMA/66 transfer
- **FDD interface:** Supports up to two FDDs
- **Serial ports:** Four serial RS-232 ports, COM1, 3, 4: RS-232, COM2: RS-232/422/485
- **Parallel port:** Two parallel ports, supports SPP/EPP/ECP mode
- **Infrared port:** Shared with COM2. Transfer rates up to 4 Mbps
- **Keyboard/mouse connector:** Supports standard PC/AT keyboard and a PS/2 mouse
- **Power management:** Supports power saving modes including Normal/ Standby/Suspend modes. APM 1.1 compliant
- **Watchdog timer:** 62 level timer intervals
- **USB:** Four universal serial bus ports (USB2.0)

Solid state disk

- Supports one 50-pin socket for CompactFlash™ card and one 32-pin socket for a DiskOnChip®

VGA/LCD interface

- **Chipset:** VIA VT8606/TwisterT, optimized Shared Memory Architecture, support 8/16/32 MB frame buffer using system memory.
- **Interface:** 4X AGP interface
- **Display mode:** Flat panel displays up to 600 x 480 @ 18 bpp 800 x 600 @ 18 bpp, 1024 x 768 @ 18 bpp, CRT monitors up to 800 x 600 @ 24 bpp, 1024 x 768 @ 16 bpp, 1280 x 1024@16 bpp

Ethernet interface

- **Chipset:** Reatlek RTL8139C, Intel 82551, Intel 82551ER

- **Ethernet interface:** PCI 10/100 Mbps Ethernet. IEEE 802.3 U protocol compatible
- Connection: On-board RJ-45 connector
- I/O address switchless setting
- Built-in boot ROM

Audio function (optional)

- Chipset: VIA 82C686B
- Audio controller: AC97 version 2.0 compliant interface
- Audio interface: Microphone in, line in, CD audio in, line out, speaker L and Speaker R

Mechanical and environmental

- Max. power requirements:+5 V ± 5% @ 26 A, +12 V ± 5% @ 1.4 A
- Operating temperature: 0 ~ 60° C (32 ~ 140° F)
- Dimensions (L x W): 220 x 235 mm (8.7" x 9.25")
- Weight: 0.5 kg (1.1 lb)

1.4 Board Dimensions

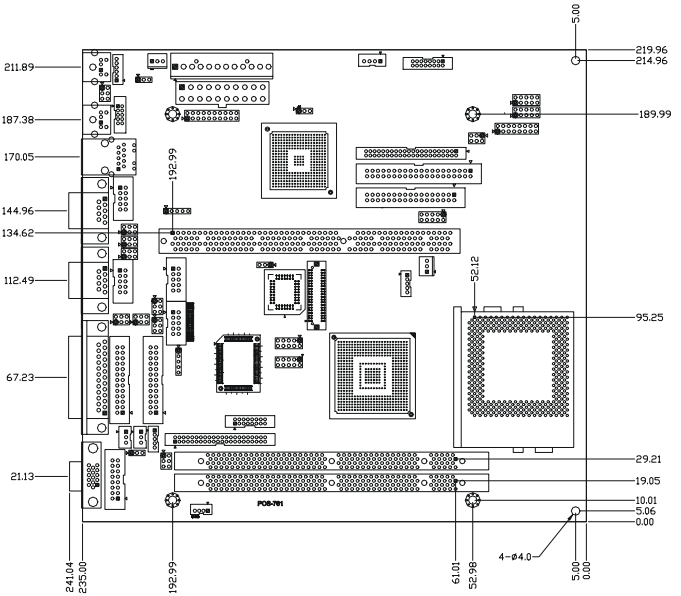


Figure 1.1: Board Dimensions (Component Side)

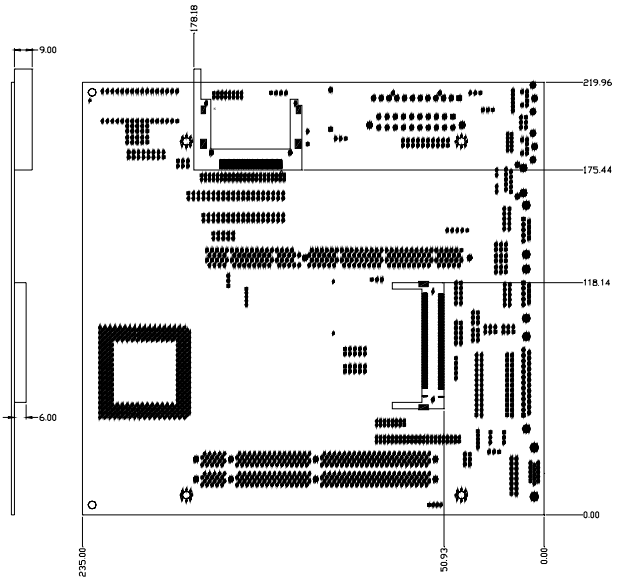


Figure 1.2: Board Dimensions (Solder Side)

CHAPTER 2

Installation

This chapter explains how to set up the POS-761F hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all the safety precautions before you begin the installation procedure.

Chapter 2 Installation

2.1 Jumpers

The POS-761F has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the board's jumpers

Table 2.1: Jumpers	
J1	Mouse and IRQ12 function select
J2	Setting CN9 DATSEL and CLKSEL function
J4	Clear CMOS
J5	DOC2K and DIO address select
J6	Front pane
J7	DIO connect
J8	CF card power
J9	SIR connect
J10,J11,J12	
J13	Setting WatchDog trigger event
J14	COM3 and COM4 power select
J15	COM1 and COM2 pin 9 function select
J16	COM1 and COM2 power select
J17	COM3 and COM4 pin 9 function select
J18	FIR connect
J19	Setting Enable backlight signal level
J20	Setting LCD Power

2.2 Connectors

On-board connectors link the POS-761F to external devices such as hard disk drives, a keyboard, or floppy drives. The tables below lists the function of each of the board's connectors

.

Table 2.2: Connectors		
1.	CN1	System fan connect
2.	CN2	CD IN connect
3.	CN3	Audio connect
4.	CN4	First 6 Pins Mini DIM for KB
5.	CN5	AT Power connect
6.	CN6	Int. KB/MOUSE connect
7.	CN7	ATX Power connect
8.	CN8	Second LAN connect
9.	CN9	Second 6 Pins Mini DIM for Mouse
10.	CN10	Secondary IDE
11.	CN11	First LAN connect
12.	CN12	Primary IDE
13.	CN13	FDD connect
14.	CN14	COM2 connect
15.	CN15	
16.	CN16	COM2 D-TYPE 9 Pins connect
17.	CN17	USB1.0 3 & 4 connect
18.	CN18	PISA Slot
19.	CN19	CPU FAN
20.	CN20	COM1 D-TYPE 9 Pins connect
21.	CN21	COM1 connect
22.	CN22	COM4 connect
23.	CN24	LVDS connect
24.	CN25	COM3 connect
25.	CN26	USB2.0 1 & 2 connect
26.	CN27	USB2.0 3 & 4 connect
27.	CN28	LPT1 D-TYPE 25 Pins connect
28.	CN29	LPT1 connect
29.	CN30	LPT2 connect
30.	CN31	For LCD 36 Bits connect

Table 2.2: Connectors		
31.	CN32	LCD Brightness controller connect
32.	CN33	LCD Contrast controller connect
33.	CN34	Backlight connect
34.	CN35	For LCD 18 Bits connect
35.	CN36	VGA D-TYPE 15 Pins connect
36.	CN37	VGA connect
37.	CN38	I2C Bus
38.	CN39	Compact Flash(Secondary IDE Master)
39.	J1	Mouse and IRQ12 function select
40.	J2	Setting CN9 DATSEL and CLKSEL function
41.	J4	Clear CMOS
42.	J5	DOC2K and DIO address select
43.	J6	Front pane
44.	J7	DIO connect
45.	J8	CF card power
46.	J9	SIR connect
47.	J10,J11,J12	Setting COM2 RS232/RS422/RS485 function
48.	J13	Setting WatchDog trigger event
49.	J14	COM3 and COM4 power select
50.	J15	COM1 and COM2 pin 9 function select
51.	J16	COM1 and COM2 power select
52.	J17	COM3 and COM4 pin 9 function select
53.	J18	FIR connect
54.	J19	Setting Enable backlight signal level
55.	J20	Setting LCD Power
56.	BT1	BATTERY SOCKET
57.	DIMM1	SDRAM Socket
58.	DIMM2	SDRAM Socket
59.	U2	DOC2000 socket
60.	U26	Socket 370 for PIII CPU

2.3 Locating jumpers and connectors

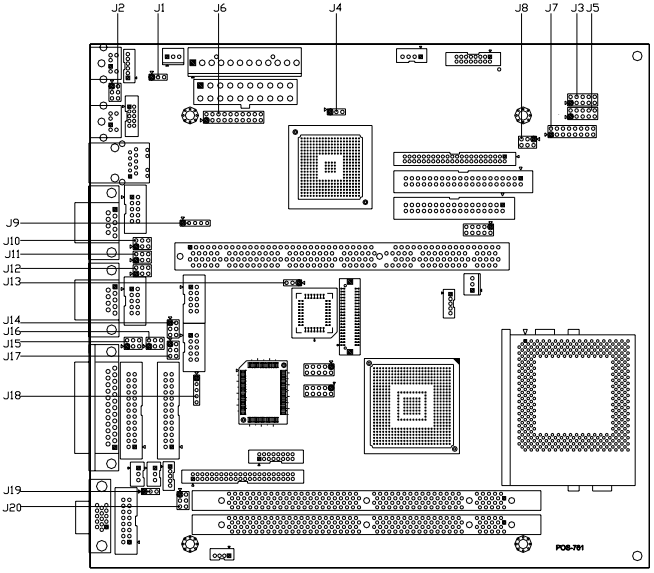


Figure 2.1: Locating Jumpers

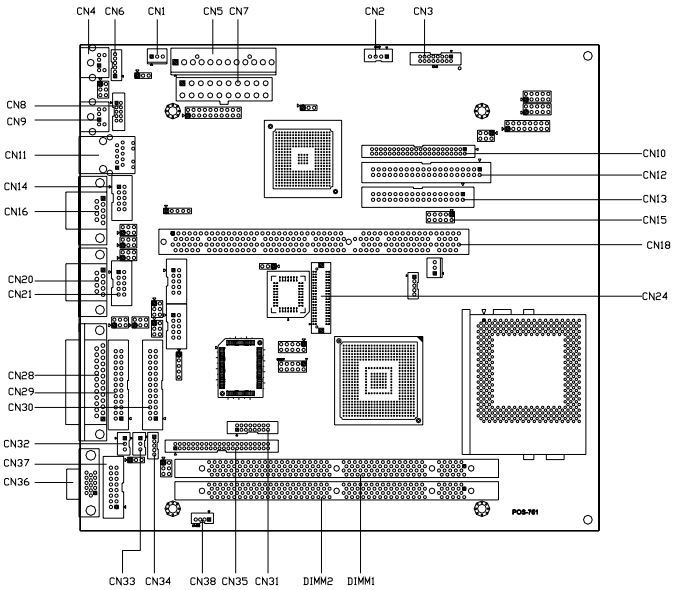
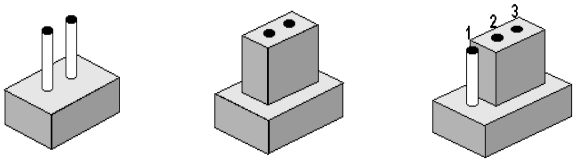


Figure 2.2: Locating Connectors (Component Side)

2.4 Setting Jumpers

You configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To ìcloseî a jumper you connect the pins with the clip. To ìopenî a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



open closed closed 2-3

The jumper settings are schematically depicted in this manual as follows:

open closed closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

Generally, you simply need a standard cable to make most connections.

2.5 CPU installation and upgrading

You can upgrade to a higher power PentiumÆ processor at any time. Simply remove the old CPU, install the new one, and the BIOS will auto detect the new CPU type and speed.

Warning! *Always disconnect the power cord from your chassis when you are working on it. Do not make connections while the power is on as sensitive electronic components can be damaged by the sudden rush of power. Only experienced electronics personnel should open the PC chassis*

Caution! *Always ground yourself to remove any static charge before touching the PC board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis.*

2.5.1 Installing a CPU in the ZIF socket

POS-761F provides a Zero Insertion Force (ZIF) socket for easy CPU installation.

1. Make sure the ZIF socket lever is in the upright position. To raise the lever, pull it out to the side a little and raise it as far as it will go.
2. Place the CPU in the empty socket. Follow the instructions that came with the CPU. If you have no instructions, do the following: Carefully align the CPU so it is parallel to the socket and the notch on the corner of the CPU corresponds with the notch on the inside of the socket. Gently slide the CPU in. It should insert easily. If it does not, pull the lever up a little more.
3. Press the lever down. The plate will slide forward. You will feel some resistance as the pressure starts to secure the CPU in the socket. This is normal and will not damage the CPU.

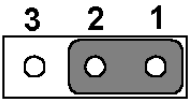
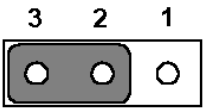
When the CPU is installed, the lever should snap into place at the side of the socket.

Note: *To remove a CPU, pull the lever out to the side a little and raise it*

2.5.2 CMOS clear (J4)

Warning! *To avoid damaging the computer, always turn off the power supply before setting "Clear CMOS." Set the jumper back to "3V Battery On" before turning on the power supply.*

Table 2.3: CMOS clear (J4)

	*3.0 V battery on	Clear CMOS
J4		

* default setting

2.6 DRAM installation

There are two on-board 168-pin DIMM sockets.

2.6.1 DIMM DRAM (DIMM 1 and DIMM 2)

You can install one DiMM (up to 512 MB) or two 168-pin DIMM (up to 1 GB DRAM) in the DIMM sockets.

Caution! *When installing DIMM, make sure the module is oriented properly. Do not use excess force during installation.*

2.7 Primary (3.5") IDE connector (CN12)

The 40-pin IDE connector supports up to two 40-pin IDE interface devices, including CD-ROM drives, tape-backup drives, HDDs, etc. When connecting, make sure pin 1 of the connector is matched with pin of the device's connector.

The built-in Enhanced IDE (Integrated Device Electronics) controller supports up to two IDE devices, including CD-ROM drives, tape backup drives, a large hard disk drive and other IDE devices. It also supports faster data transfer rates and allows IDE hard disk drives with capacities in excess of 528 MB.

2.7.1 Connecting the hard drive

Connecting drives is done in a daisy-chain fashion. Wire number 1 on the cable is red or blue, while the other wires are gray.

Unlike floppy drives, IDE hard drives can connect to either end of the cable. If you install two drives, you will need to set one as the master and one as the slave by using jumpers on the drives. If you install just one drive, set it as the master.

2.8 Secondary (2.5") IDE connector (CN10)

The on-board 44-pin mini-pitched IDE interface is used to let user support either a 2.5" HDD.

Follow the same connection arrangement as the 3.5" HDD if you want to connect to a 2.5" IDE device. Read the BIOS setup section for more information regarding system settings.

Note: You cannot use a DMA-66 HDD, due to the cableís limitation.

2.9 FDD connector (CN13)

You can attach up to two floppy disks to the POS-761F's on-board controller. You can use any combination of 5º" (360 KB and 1.2 MB) and/or 3¾" (720 KB, 1.44 MB, and 2.88 MB) drives.

A 34-pin daisy-chain drive connector cable is required for a dual-drive system. On one end of the cable is a 34-pin flat-cable connector. On the other end are two sets of floppy disk drive connectors. Each set consists of a 34-pin flat-cable connector (usually used for 3¾" drives) and a printed-circuit board connector (usually used for 5º" drives).

2.9.1 Connecting the floppy drive

1. Plug the 34-pin flat-cable connector into CN13. Make sure that the red wire corresponds to pin one on the connector.
2. Attach the appropriate connector on the other end of the cable to the floppy drive(s). You can use only one connector in the set. The set on the end (after the twist in the cable) connects to the A: drive. The set in the middle connects to the B: drive.
3. If you are connecting a 5º" floppy drive, line up the slot in the printed circuit board with the blocked-off part of the cable connector. If you are connecting a 3¾" floppy drive, you may have trouble determining which pin is pin number one. Look for a number printed on the circuit board indicating pin number one. Also, the connector on the floppy drive connector may have a slot. When the slot is up, pin number one should be on the right. Check the documentation that came with the drive for more information. The B: drive can be attached to the connectors in the middle of the cable as described above.

2.10 LPT1 (primary parallel port) connectors (CN28/ CN29)

The primary parallel printer port is located at the rear edge of the board, and has a DB-25 connector. This printer port is typically used to connect a printer via an adapter cable. LPT1's IRQ setting is defined as IRQ7. You can select Normal/EPP/ECP for LPT1, and enable/disable it in BIOS (see Chapter 4). There is another internal parallel port connector, CN29, also available.

2.11 LPT2 (secondary parallel port) connector (CN30)

The secondary parallel port is located next to and on the inner side of the primary parallel port. This secondary port has a 26-pin box header. LPT2ís IRQ setting is defined as IRQ9. You can select Printer/EPP/ECP/ SPP for LPT2, and enable/disable it in BIOS (see Chapter 4).

2.12 Keyboard/mouse connectors (CN4, CN6)

The POS-761F is uniquely designed to allow 3 ways for keyboard and mouse input. Please note that only one keyboard and one mouse can be connected at one time.

- External mini-DIN PS/2 keyboard/mouse jack (CN4)
- Internal 6-pin KB/Mouse connector (CN6)
- External mini-DIN PS/2 mouse/keyboard jack (CN4) selected by J1

Table 2.4: Keyboard/mouse select (J1)

Closed pins	Result
1-3, 2-4	Keyboard and mouse
3-5, 4-6	Mouse only*

2.13 Power connectors (CN5, CN7, CN1,CN19)

2.13.1 Main power connector (CN5)

The power connection is a 12-pin connector (PS/2 or AT power standard) requiring ±5 V and ±12 V power. Always keep the ground wires (black color) toward the middle when connecting the power wire from the power supply.

2.13.2 ATX power input connector (CN7)

The power connection is a 20-pin connector requiring ±5 V and ±12 V and 5VSB single.

2.13.3 Fan power supply connector (CN1,CN19)

There are two FAN connector provided, CN1 is system FAN, CN19 is optional CPU cooling fan.Only present when +5 V and +12 V power is supplied to the board.

2.14 Audio interfaces (CN2, CN3)

The POS-761FA is equipped with a high quality audio interface, which provides 16-bit CD-quality recording and playback as well as OPL3 compatible FM music. It is supported by all major operating systems and is 100% Sound Blaster Pro compatible.

2.14.1 Audio connector (CN3)

The POS-761FA provides all major audio signals on a 16-pin flat-cable connector, CN3. These audio signals include Microphone in (mono), Line in (stereo), Line out (stereo), and Speaker out (stereo). You will need an adapter cable if you use traditional telephone jack connectors for these audio signals.

2.14.2 CD audio-in connector (CN2)

All CD-ROM drives can provide analog audio signal output when used as a music CD player. The CN2 on POS-761FA is a connector to input CD audio signal into the audio controller. The audio cable of your CD-ROM drive will be used to connect to CN2.

2.15 Serial (COM1- 4)(CN20/21,CN14/16,CN25,CN22)

The POS-761F has a total of four on-board RS-232 serial ports, COM1-4. They are differentiated by COM1 and COM2 (RS-232/422/485) as primary serial ports and COM3 and COM4 as secondary ports. All four serial ports have +5 V and +12 V power capabilities on both pin #1 and pin #9, depending on the jumper setting. Pin assignments for both internal and external COM ports can be found in the appendix.

2.15.1 Primary(COM1:CN20/CN21,COM2:CN14/CN16)

Each primary serial port has two connections, one external DB-9 and one internal 10-pin header giving the user the flexibility to adapt the board to many different systems. IRQ for COM1 and COM2 is fixed with COM1 on IRQ4 and COM2 on IRQ3. COM1 and COM2 can be enabled or disabled via BIOS (see Chapter 4).

2.15.2 Secondary(COM3: CN25, COM4: CN22)

The secondary serial ports each have one 10-pin, internally positioned header connection. The IRQ for COM3 is fixed at IRQ10 and COM4 is fixed at IRQ5. COM3 and COM4 can be enabled/disabled via BIOS (see Chapter 4).

2.16 COM2 RS-232/422/485 (J10, J11 and J12)

Follow the jumper chart below to set the desired mode for COM2

Table 2.5: COM2 RS-232/422/485 (J10, J11 & J12)			
J10	J11	J12	
Closed pins	Closed pins	Closed pins	Result
5-6	1-3, 2-4	1-3, 2-4	RS-232*
1-3 & 2-4	3-5, 4-6	3-5, 4-6	RS-422
1-3 & 2-4	3-5, 4-6	3-5, 4-6	RS-485

2.17 COM1- 4 RI pin +5/+12V (J15,J16,J14,J17)

COM1 - COM4 can supply +5 V or +12 V power to the serial devices via RI pin of the COM port connector. The Pin 9 outputs of COM1 - COM4 can be connected to either RI or power by setting J14 & J19. If you select power, you can choose +5 V or +12 V by setting J12 & J18.

Table 2.6: COM1, COM2 RI/power select (J15)	
Closed pins	Result
2-4	COM1 Power
4-6	COM1 RI*
1-3	COM2 Power
3-5	COM2 RI*

Table 2.7: COM1, COM2 RI/power select (J16)	
Closed pins	Result
4-6	COM1 (+12 V)
2-4	COM1 (+5 V)*
3-5	COM2 (+12 V)
1-3	COM2 (+5 V)*

Table 2.8: COM3, COM4 R1/power select (J17)	
Closed pins	Result
2-4	COM3 Power
4-6	COM3 RI*

Table 2.8: COM3, COM4 R1/power select (J17)	
1-3	COM4 Power
3-5	COM4 RI*

Table 2.9: COM3, COM4 R1/power select (J14)	
Closed pins	Result
4-6	COM3 (+12 V)
2-4	COM3 (+5 V)*
3-5	COM4 (+12 V)
1-3	COM4 (+5 V)*

2.18 VGA interface connections

The POS-761F 's AGP 4X interface can drive conventional CRT displays and is capable of driving a wide range of flat panel displays, including electroluminescent (EL), gas plasma, passive LCD and active LCD displays. The board has two connectors to support these displays, one for standard CRT VGA monitors and one for flat panel displays.

2.18.1 CRT display connector (CN36 and CN37)

CN30 is a standard 15-pin D-SUB connector commonly used for the CRT VGA monitor only. CN31 is a 16-pin header connector allowing users to extend the VGA connector and keyboard interface elsewhere via a customized cable. Pin assignments appear in the appendix.

2.18.2 Flat panel display connector (CN31)

CN31 consists of a 44-pin and a 16-pin dual inline header. It can connect to a 36-bit TFT LCD panel. Pin assignments appear in the appendix. (For more information on LCD connection information between CN31 and an LCD, refer to Chapter 3.)

2.18.3 LCD power setting (J20)

The POS-761F's AGP 4X interface supports 5 V and 3.3 V LCD displays. By changing the setting of J20, you can select the panel video signal level to be 5 V or 3.3 V.

Table 2.10: LCD power (J20)

Closed pins	Result
1-3, 2-4	+5 V LCD panel*
3-5, 4-6	+3.3 V LCD panel

Configuration of the VGA interface is done completely via the software utility. You do not have to set any jumpers. Refer to Chapter 3 for software setup details.

Refer to Chapter 3 for details on connecting the five standard LCDs: Sharp LM64183P, LM64P89, Toshiba LTM10C209A, Kyocera KCB6448BSTT-X5, and Planar EL640.480-AM1 displays.

2.19 Ethernet configuration

The POS-761F is equipped with a high performance 32-bit PCI-bus Ethernet interface which is fully compliant with IEEE 802.3 u

10/100Mbps CSMA/CD standards. It is supported by all major network operating systems.

The medium type can be configured via the RSET8139.EXE program included on the utility disk (see Chapter 3 for detailed information).

2.19.1 RJ-45 connector (CN11)

100/10Base-T connects to the POS-761F via an RJ-45 standard jack.

2.19.2 Network boot

The Network Boot feature can be utilized by incorporating the Boot ROM image files for the appropriate network operating system. The Boot ROM BIOS files are on the included utility disk.

2.20 Watchdog timer configuration

An onboard watchdog timer reduces the chance of disruptions which EMP (electro-magnetic pulse) interference can cause. This is an invaluable protective device for standalone or unmanned applications. Setup involves one jumper and running the control software (refer to Appendix A).

2.20.1 Watchdog timer action (J13)

When the watchdog timer activates (CPU processing has come to a halt), it can reset the system or generate an interrupt on IRQ11. This can be set via setting J13 as shown below:

Table 2.11: Watchdog Function J13

Closed pins	Result
1-2	Reset*
2-3	IRQ11

2.21 USB connector (CN26,CN27)

The POS-761F board provides four USB (Universal Serial Bus) interfaces which support plug and play and hot attach/detach for up to 127 external devices. The USB interfaces comply with USB specification Rev. 2.0 and are fuse protected.

The USB interfaces are accessed through 10-pin (5x2) flat-cable connectors, CN16/CN27. You will need an adapter cable if you use a standard USB connector. The adapter cable has a 5-pin connector on one end and a USB connector on the other.

The USB interfaces can be disabled in the system BIOS setup.

2.22 DOC® 2000 address select (J44)

Table 2.12: DOC® 2000 address select (J44)

DOC 2000	5-6	3-4	1-2
C8000	Open	Open	Open
CA000	Open	Open	Short
CC000	Open	Short	Open
CE000*	Open	Open	Short
D0000	Short	Open	Open
D2000	Short	Open	Short
D4000	Short	Short	Open
D6000	Short	Short	Short

DIO		9-10	7-8
200		Open	Open
210		Open	Short
220		Short	Open
230*		Short	Short

2.23 Mouse and IRQ12 function select (J1)

Table 2.13: Mouse and IRQ12 functin select (J1)	
Closed pins	Result
1-2	PMDAT*
2-3	IRQ12

2.24 Digital I/O (J7: 4 Outputs, 4 Inputs)

The POS-760 has two high drive digital outputs (24 VDC, 1 A max) and four digital inputs (TTL level). You can configure the digital I/O to control the opening of the cash drawer and to sense the closing of the cash drawer. The following explains how the digital I/O is controlled via software programming and how a 12 V solenoid or relay can be triggered:

Digital I/O Connector			
IN0	1	2	+5 V
IN1	3	4	OUT0
IN2	5	6	GND
IN3	7	8	OUT1
GND	9	10	+ 12 V
NC	11	12	NC
OUT3	13	14	GND
OUT2	15	16	+ 12

2.24.1 Digital output programming

Output is CMOS MOSFET (high drive) type, capable of handling 24 VDC / 1 A loading. It is meant to drive relays or a solenoid.

Table 2.14: Digital output programming

Output	Address	Bit
Out 1	220	0
Out 2	220	1

Example: ("0" = off "1" = on)

Data 00 = Out 0 and Out 1 = "0"

Data 01 = Out 0 = "1"

Data 02 = Out 1 = "1"

Data 03 = Out 0 and Out 1 = "1"

2.24.2 Digital output solenoid wiring examples

The POS-761Fís J7 digital I/O connector contains a power pin for +5 and +12 V. +5 V is on pin 2 and +12 V is on pin 10.

Example:

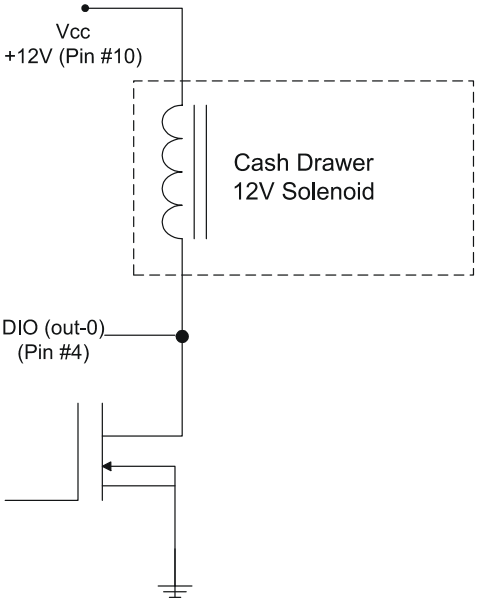


Figure 2.3: POS-761F digital output solenoid wiring

CHAPTER 3

Software Configuration

This chapter details the software configuration information. It shows you how to configure the card to match your application requirements. Award System BIOS will be covered in Chapter 4.

Sections include:

- Introduction
- VGA display software configuration
- LCD display configuration
- Connections for four standard LCDs
- Ethernet interface configuration

Chapter 3 Software Configuration

3.1 Introduction

The POS-761F system BIOS and custom drivers are located in a

256 KB, 32-pin (JEDEC spec.) Flash ROM device, designated U10. A single Flash chip holds the system BIOS, VGA BIOS, and network Boot ROM image. The display can be configured via software. This method minimizes the number of chips and eases configuration. You can change the display BIOS simply by reprogramming the Flash chip.

3.2 VGA display firmware configuration

The POS-761F's on-board VGA interface supports a wide range of popular LCD, EL, gas plasma flat panel displays and traditional analog CRT monitors. The optimized shared memory architecture supports an 8/16/32 MB frame buffer using system memory to provide resolutions of 1280 x 1024 @ 16 bpp, the interface can drive CRT displays with resolutions up to 1024 x 768 @ 16 bpp and 800 x 600 @ 16 bpp.

The VGA interface is configured completely via the software utility, so you do not have to set any jumpers. Configure the VGA display as follows:

1. Apply power to the POS-761F with a color TFT display attached. This is the default setting for the POS-761F. Ensure that the AWDFLASH.EXE and *.BIN files are located in the working drive.

NOTE: Ensure that you do not run AWDFLASH.EXE while your system is operating in EMM386 mode.

2. At the prompt, type AWDFLASH.EXE and press <Enter>. The VGA configuration program will then display the following:

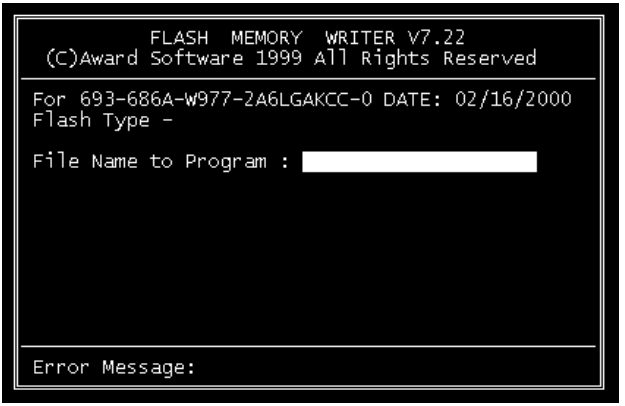


Figure 3.1: VGA setup screen

3. At the prompt, enter the new BIN file which supports your display. When you are sure that you have entered the file name correctly press <Enter>.
4. The screen will ask ìDo you want to save BIOS?î. If you change your mind or have made a mistake, press N to abort and end the setup procedure. Press Y if you wish to save the existing configuration before changing it. Then type the name under which you want to save the current configuration.
5. The prompt will then ask ìAre you sure to program?î. Press Y if you want the new file to be written into the BIOS. Press N to exit the program.

The new VGA configuration will then write to the ROM BIOS chip. This configuration will remain the same until you run the AWDFLASH.EXE program and change the settings.

3.3 Connections for four standard LCDs

Connections to Sharp LM64183P (640 x 480 DSTN MONO LCD)

Table 3.1: Sharp LM64183P LCD (CN35)

LM64183P		POS-761F (CN35)	
Pin	Name	Pin	Name
CN1-1	S	36	FLM
CN1-2	CP1	38	LP
CN1-3	CP2	35	SHFCLK
CN1-4	DISP	5	+5 V
CN1-5	VDD	6	+5 V
CN1-6	VSS	3	GND
CN1-7	VEE	-	-17 V (external power)
CN1-8	DU0	12	P3
CN1-9	DU1	11	P2
CN1-10	DU2	10	P1
CN1-11	DU3	9	P0
CN1-12	DL0	16	P7
CN1-13	DL1	15	P6
CN1-14	DL2	14	P5
CN1-15	DL3	13	P4

* LM64183P requires -17 V for VEE

Connections to PLANAR EL640.480-AM1 (640 x 480 EL LCD)

Table 3.2: POS-761F connection for PLANAR EL LCD (CN35)

PLANAR 640.480-AM1		POS-761F (CN35)	
Pin	Name	Pin	Name
1	UD1	11	P2
2	UDO	12	P3
3	UD3	9	P0
4	UD2	10	P1
5	LD1	15	P6
6	LD0	16	P7

Table 3.2: POS-761F connection for PLANAR EL LCD (CN35)			
7	LD3	13	P4
8	LD2	14	P5
9	CP2	35	SHFCLK
10	GND	33	GND
11	CP1	38	LP
12	GND	33	GND
13	S	36	FLM
14	GND	34	GND
15	GND	3	GND
16	GND	4	GND
17	VL	5	VCC
18	VL	6	VCC
19	VH	1	+12 V
20	VH	2	+12 V

Connections to Toshiba LTM10C209A (640 x 480 TFT color LCD)

Table 3.3: Toshiba LTM10C209A LCD (CN35)			
LTM10C209A		POS-761F (CN35)	
Pin	Name	Pin	Name
1	GND	3	GND
2	CLK	35	SHFCLK
3	GND	4	GND
4	R0	27	P18
5	R1	28	P19
6	R2	29	P20
7	GND	8	GND
8	R3	30	P21
9	R4	31	P22
10	R5	32	P23
11	GND	33	GND
12	G0	19	P10

Table 3.3: Toshiba LTM10C209A LCD (CN35)			
13	G1	20	P11
14	G2	21	P12
15	GND	33	GND
16	G3	22	P13
17	G4	23	P14
18	G5	24	P15
19	GND	34	GND
20	ENAB	37	M
21	GND	34	GND
22	B0	11	P2
23	B1	12	P3
24	B2	13	P4
25	GND	39	GND
26	B3	14	P5
27	B4	15	P6
28	B5	16	P7
29	GND	39	GND
30	VDD	5	+5 V
31	VDD	6	+5 V

Connections to Kyocera KCB6446BSTT-X5 (640 x 480 DSTN color LCD)

Table 3.4: POS-761F connection for Kyocera KCB6446BSTT-X5 LCD (CN35)			
KCB6446BSTT-X5		POS-761F (CN35)	
Pin	Name	Pin	Name
CN1-1	FRM	36	FLM
CN1-2	DF	-	-
CN1-3	DISP	40	ENABKL
CN1-4	LOAD	38	LP
CN1-5	VSS	33	GND

Table 3.4: POS-761F connection for Kyocera KCB6446BSTT-X5 LCD (CN35)			
CN1-6	CP	35	SHFCLK
CN1-7	VSS	34	GND
CN1-8	HD0	20	P11
CN1-9	HD1	19	P10
CN1-10	HD2	18	P9
CN1-11	HD3	17	P8
CN1-12	HD4	12	P3
CN1-13	HD5	11	P2
CN1-14	HD6	10	P1
CN1-15	HD7	9	P0
CN2-1	LD0	24	P15
CN2-2	LD1	23	P14
CN2-3	LD2	22	P13
CN2-4	LD3	21	P12
CN2-5	LD4	16	P7
CN2-6	LD5	15	P6
CN2-7	LD6	14	P5
CN2-8	LD7	13	P4
CN2-9	VDD	5	VCC
CN2-10	VSS	3	GND
CN2-11	NC	-	-
CN2-12	NC	-	-
CN2-13	NC	-	-
CN2-14	VCONT	*7	*VEESAFE

3.4 Ethernet software configuration

The POS-761F's on-board Ethernet interface supports all major network operating systems. To configure the medium type, to view the current configuration, or to run diagnostics, do the following:

1. Power the POS-761F on. Ensure that the RSET8139.EXE file is located in the working drive.
2. At the prompt type RSET8139.EXE and press <Enter>. The Ethernet configuration program will then be displayed.
3. This simple screen shows all the available options for the Ethernet interface. Just highlight the option you wish to change by using the Up and Down keys. To change a selected item, press <Enter>, and a screen will appear with the available options. Highlight your option and press <Enter>. Each highlighted option has a helpful message guide displayed at the bottom of the screen for additional information.
4. After you have made your selections and your are sure that this is the configuration you want, press ESC. A prompt will appear asking if you want to save the configuration. Press Y if you want to save.

The Ethernet Setup Menu also offers three very useful diagnostic functions. These are:

1. Run EEPROM Test.
2. Run Diagnostics on Board.
3. Run Diagnostics on Network.

Each option has its own display screen which shows the format and result of any diagnostic tests undertaken.

CHAPTER 4

Award BIOS Setup

This chapter describes how to set BIOS configuration data.

Chapter 4 Award BIOS Setup

4.1 System test and initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

```
press <F1> to RESUME
```

Write down the message and press the F1 key to continue the bootup sequence.

4.1.1 System configuration verification

These routines check the current system configuration against the values stored in the cardís CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time.
2. You have changed the hardware attached to your system.
3. The CMOS memory has lost power and the configuration information has been erased.

The POS-761Fís CMOS memory has an integral lithium battery backup. The battery backup should last ten years in normal service, but when it finally runs down, you will need to replace the complete unit.

4.2 Award BIOS setup

Awardís BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

4.2.1 Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.

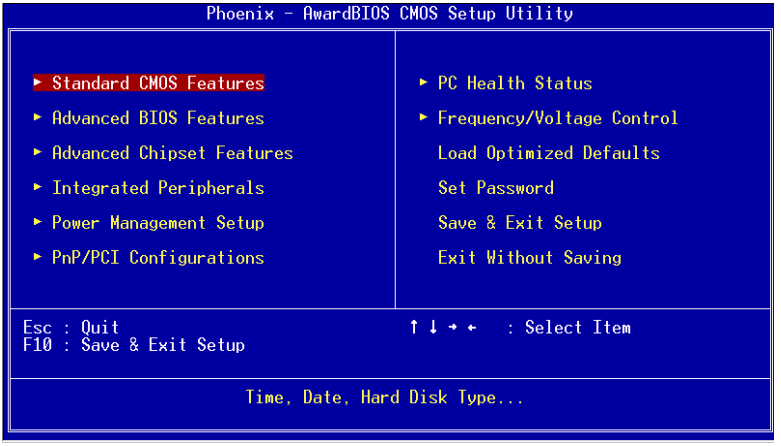


Figure 4.1: Setup Program Initial Screen

4.2.2 Standard CMOS setup

When you choose the Standard CMOS Setup option from the Initial Setup Screen menu, the screen shown below is displayed. This standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy drive, display, and memory. Once a field is

highlighted, online help information is displayed in the left bottom of the Menu screen.

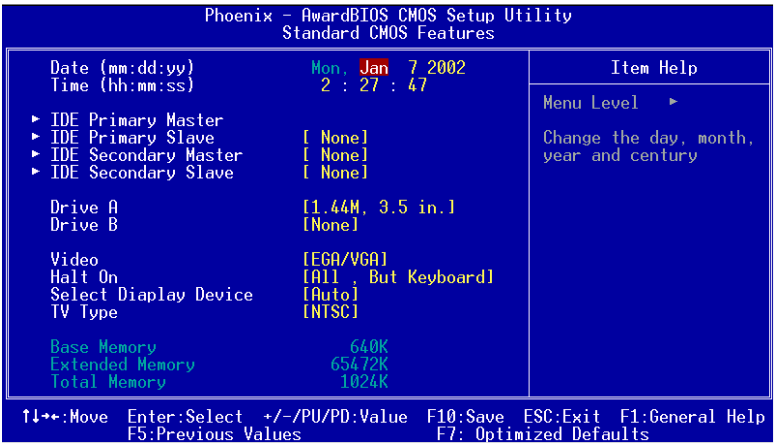


Figure 4.2: CMOS Setup Screen

4.2.3 BIOS features setup

By choosing the BIOS FEATURES Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-761F.

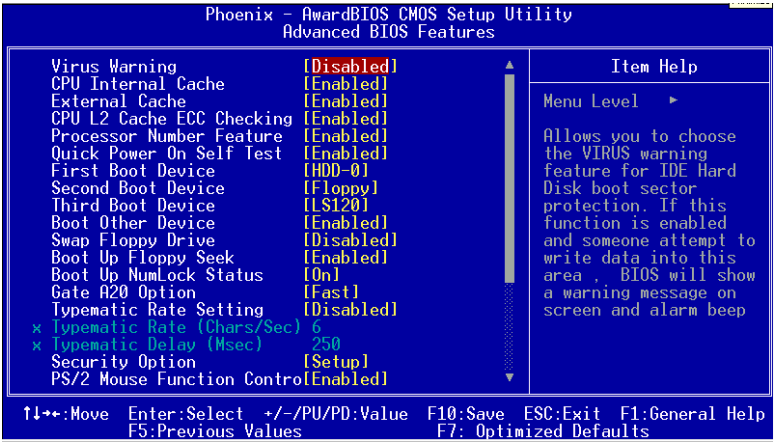


Figure 4.3: BIOS Features Setup Screen

4.2.4 Chipset features setup

By choosing the CHIPSET FEATURES Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-761F.

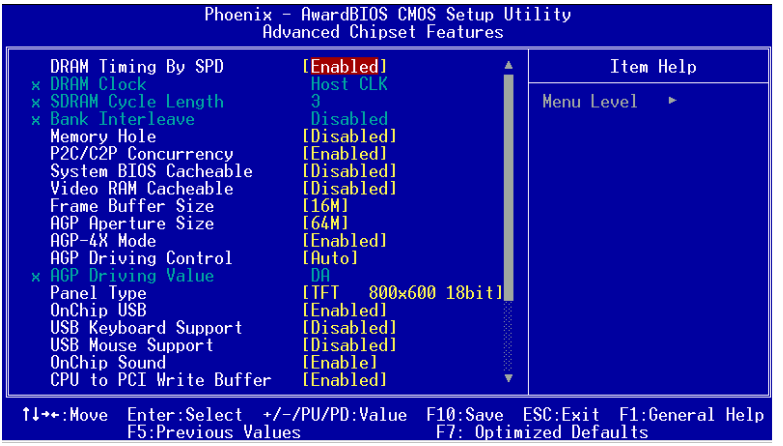


Figure 4.4: ChipsetFeatures Setup Screen

4.2.5 Power management setup

By choosing the POWER MANAGEMENT Setup option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-761F.

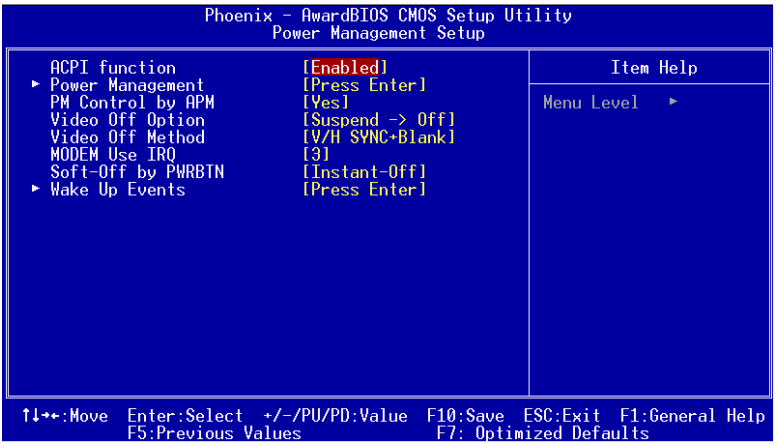


Figure 4.5: Power Management Setup Screen

4.2.6 PnP/PCI configuration setup

By choosing the PnP/PCI CONFIGURATION option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-761F.

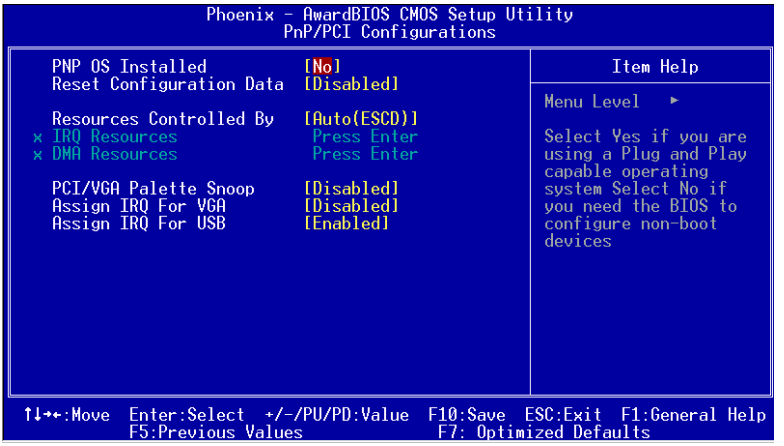


Figure 4.6: PCI configuration setup screen

4.2.7 Integrated peripherals

By choosing the INTEGRATED PERIPHERALS option from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturerís default values for the POS-761F.

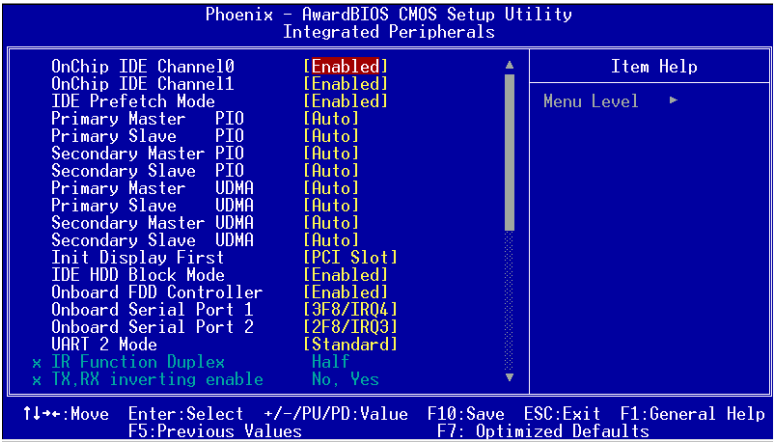


Figure 4.7: Integrated peripherals setup screen

4.2.8 Load Optimized Defaults BIOS

LOAD OPTIMIZED DEFAULTS loads the default optimized system values directly from ROM. If the stored record created by the Setup program becomes corrupted (and therefore unusable), these defaults will load automatically when you turn the POS-761F on.

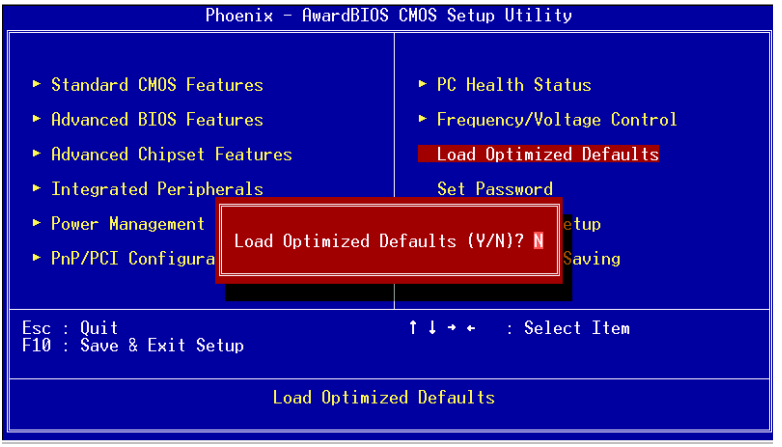


Figure 4.8: Load Optimized Default BIOS screen

4.2.9 Set Password

To change the password, choose the SET PASSWORD option form the Setup main menu and press <Enter>.

1. If the CMOS is bad or this option has never been used, there is default password which is stored in the ROM. The screen will display the following messages:

```
Enter Password
```

Press <Enter>.

2. If the CMOS is good or this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen will display the following message:

```
Confirm Password
```

Enter the current password and press <Enter>.

3. After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password can be at most 8 characters long.

Remember - to enable this feature, you must first select either Setup or System in the BIOS FEATURES SETUP.

4.2.10 Save & exit setup

If you select this option and press <Enter>, the values entered in the setup utilities will be recorded in the chipset's CMOS memory. The microprocessor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.

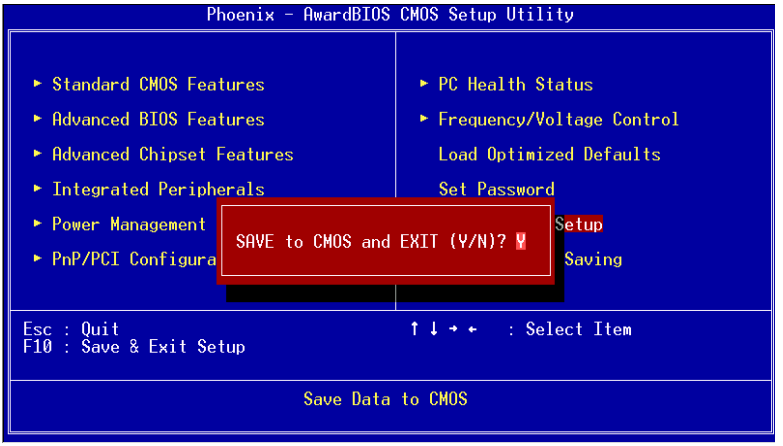


Figure 4.9: Save and Exit Setup Screen

4.2.11 Quit without saving

Selecting this option and pressing <Enter> lets you Quit the Setup program without recording any new values or changing old ones.

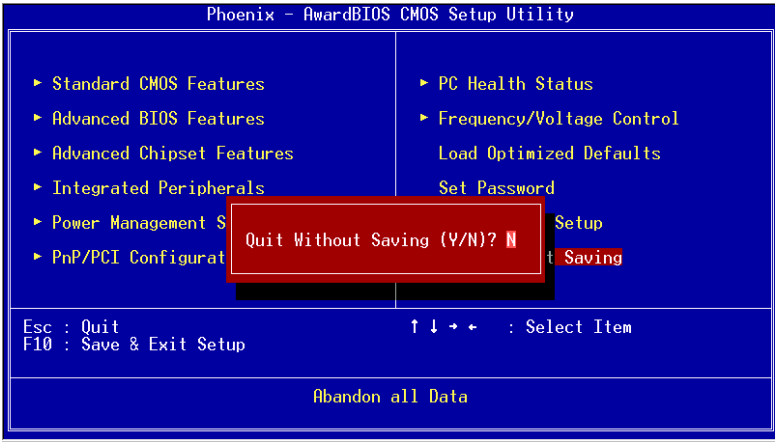


Figure 4.10: Quit Setup Screen

CHAPTER 5

AGP 4X Setup

The POS-761F features an onboard AGP 4X flat panel/VGA interface. This chapter provides instructions for installing and operating the software drivers on the included display driver diskette.

Chapter 5 AGP 2X Setup

5.1 Introduction

The POS-761F has an onboard AGP flat panel/VGA interface. The specifications and features are described as follows:

5.1.1 Chipset

The POS-761F uses a VIA Twister 8606T chipset from VIA Technology Inc. for its AGP/SVGA controller. It supports many popular LCD, and LVDS LCD displays and conventional analog CRT monitors. The VIA8606T VGA BIOS supports color TFT and DSTN LCD flat panel displays. In addition, it also supports interlaced and non-interlaced analog monitors (color and monochrome VGA) in high-resolution modes while maintaining complete IBM VGA compatibility. Digital monitors (i.e. MDA, CGA, and EGA) are NOT supported. Multiple frequency (multisync) monitors are handled as if they were analog monitors.

5.1.2 Display memory

The Twister chip can support 8/16/32MB frame buffer shared with system memory; the VGA controller can drive CRT displays or color panel displays with resolutions up to 1280 x 1024 at 16 M colors.

5.1.3 Display types

CRT and panel displays can be used simultaneously. The POS-761F can be set in one of three configurations: on a CRT, on a flat panel display, or on both simultaneously. The system is initially set to simultaneous display mode. If you want to enable the CRT display only or the flat panel display only, please contact VIA Technology Inc., or our sales representative for detailed information.

5.1.4 Dual/Simultaneous Display

The POS-761F uses a VIA Twister VT8606T LCD controller that is capable of providing simultaneous dual view display of the same content on a flat panel and CRT.

To set up dual view (simultaneus mode) under Windows 9x, Windows ME, Windows NT/2000/XP, follow these steps:

Step 1. Open the Control panel, and select “Display”, “Settings”.

Step 2. Select " CRT+LCD " or " CRT+TV " for dual view

Step 3. Click “OK”.

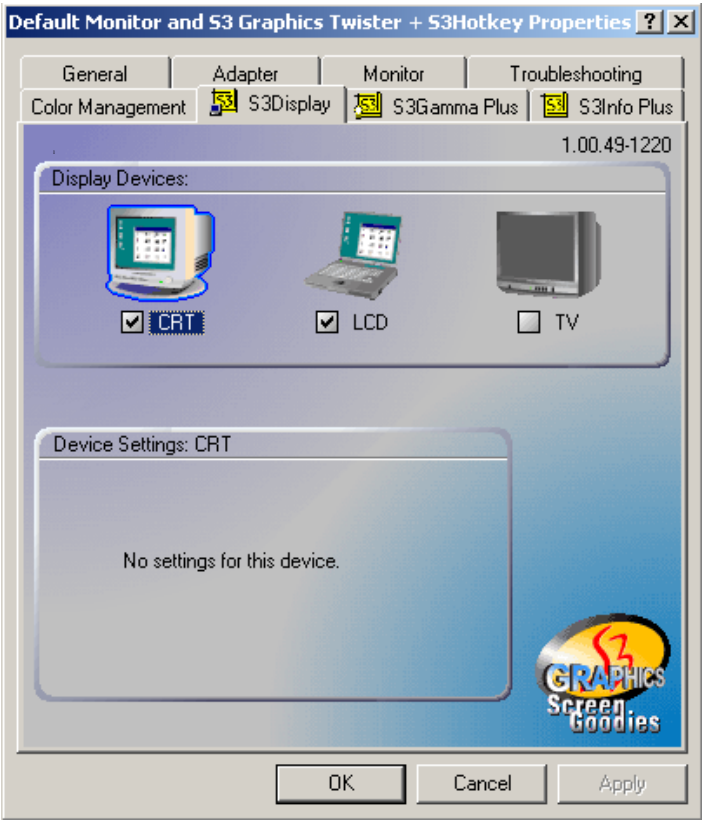


Figure 5.1: Selecting Display Settings

5.2 Installation of the SVGA Driver

Complete the following steps to install the SVGA driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your POS-761F.

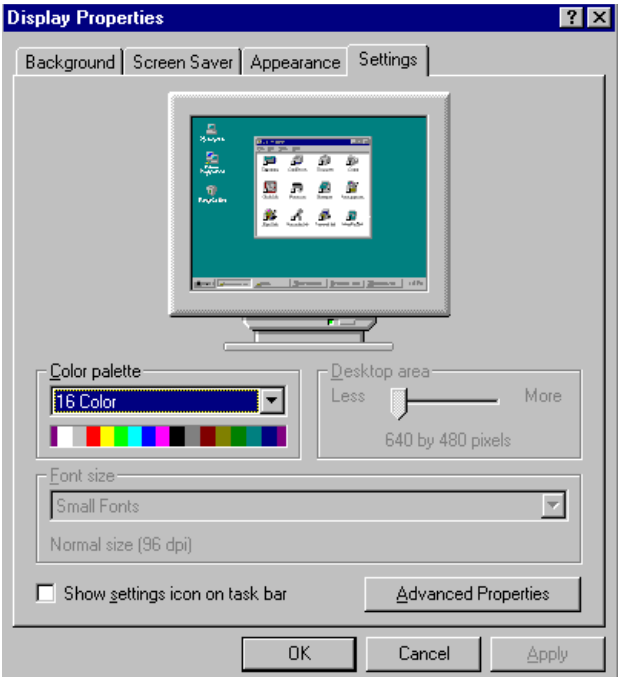
Notes:

1. The windows illustrations in this chapter are intended as examples only. Please follow the listed steps, and pay attention to the instructions which appear on your screen.

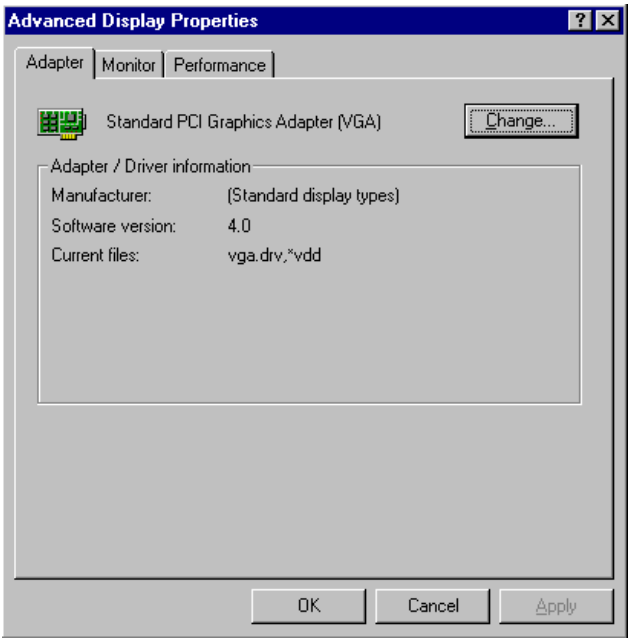
2. For convenience, the CD-ROM drive is designated as "D" throughout this chapter.

5.2.1 Installation for Windows 95

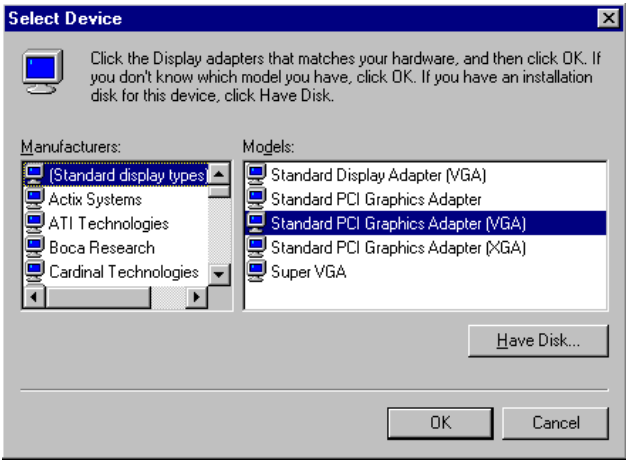
1. Select "Start", "Settings", "Control Panel", "Display", "Settings", and "Advanced Properties".



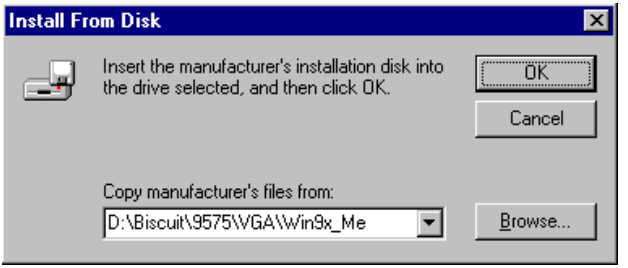
2. Choose the "Adapter" tab, then press the "Change..." button.



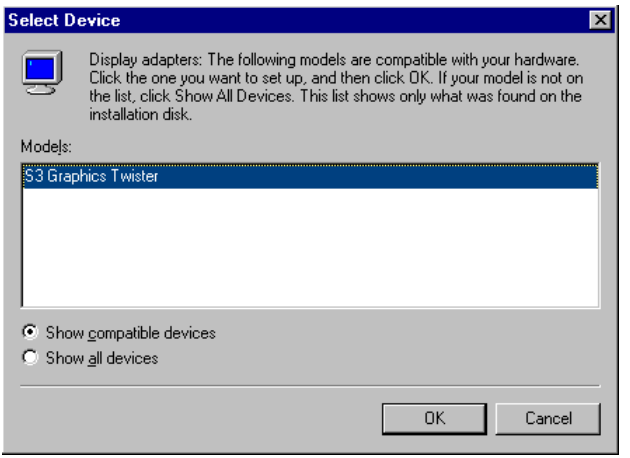
3. Press the "Have Disk" button.



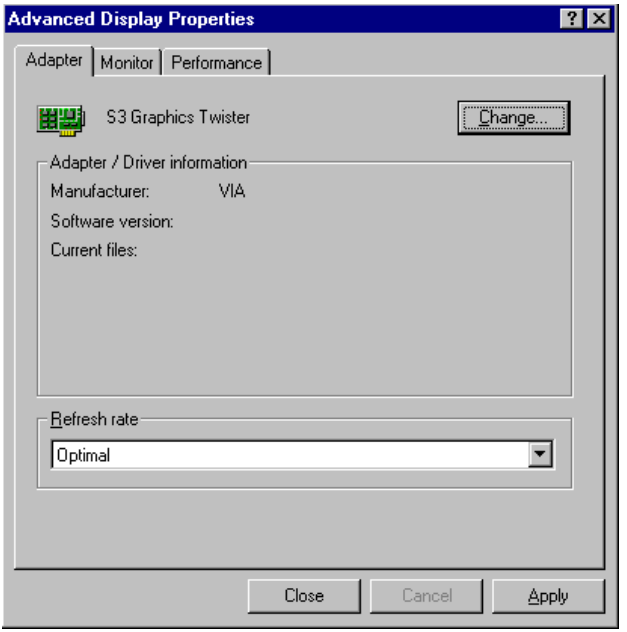
4. Type in the path:
D:\Biscuit\9575\VGA\Win9x_Me



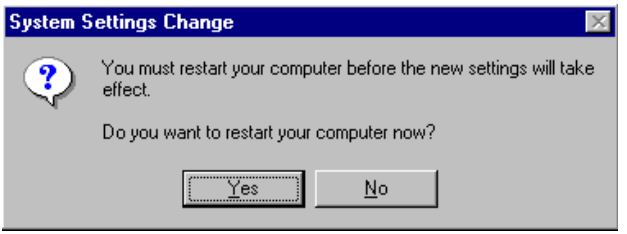
5. Select the highlighted item, and click the "OK" button.



6. "S3 GraphicsTwister" appears under the adapter tab. Click the "Apply" button, then the "OK" button.

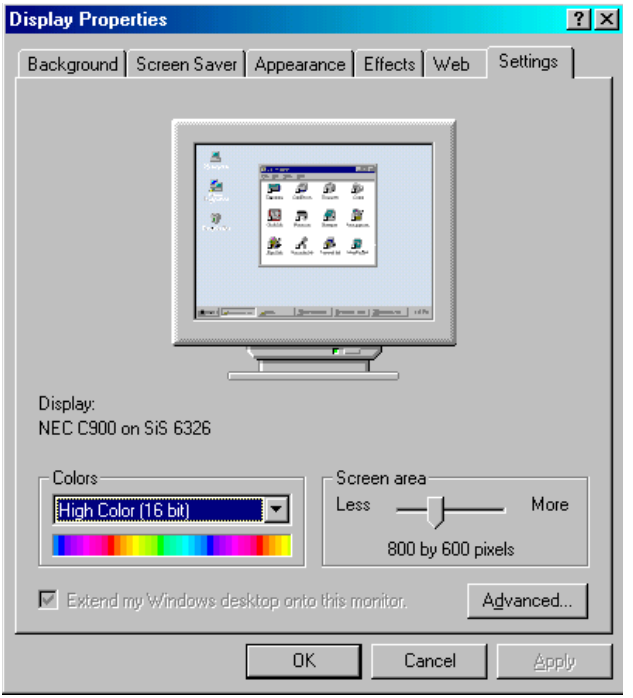


7. Press “Yes” to reboot.

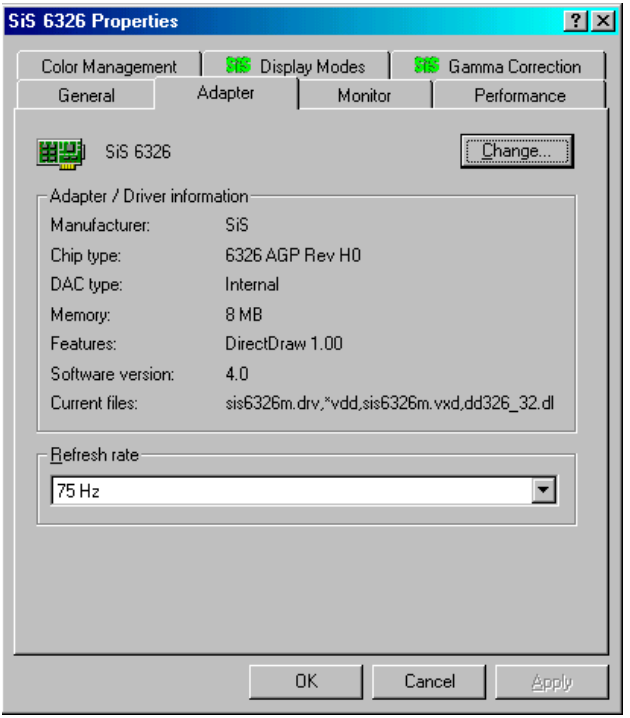


5.2.2 Installation for Windows 98/Me

1. Select "Start", "Settings", "Control Panel", "Display", and "Settings," then press the "Advanced..." button.

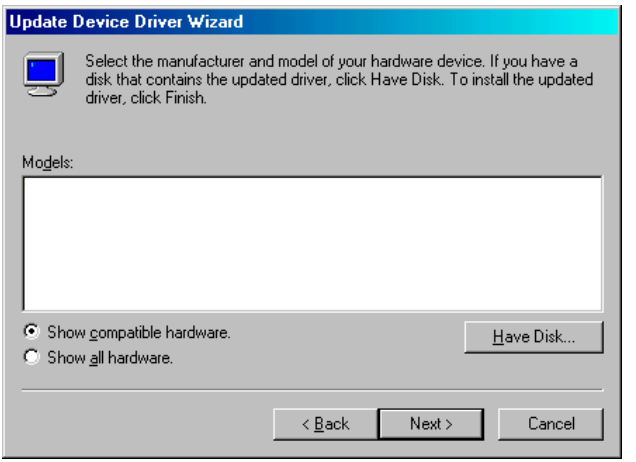


2. Select “Adapter,” then “Change.”

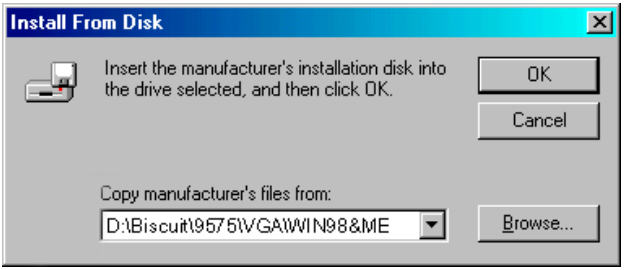


3. Press “Next,” then “Display a list....”

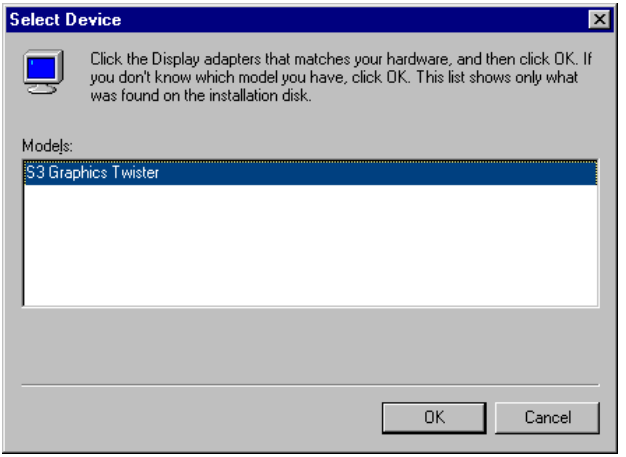
4. Press the “Have disk...” button.



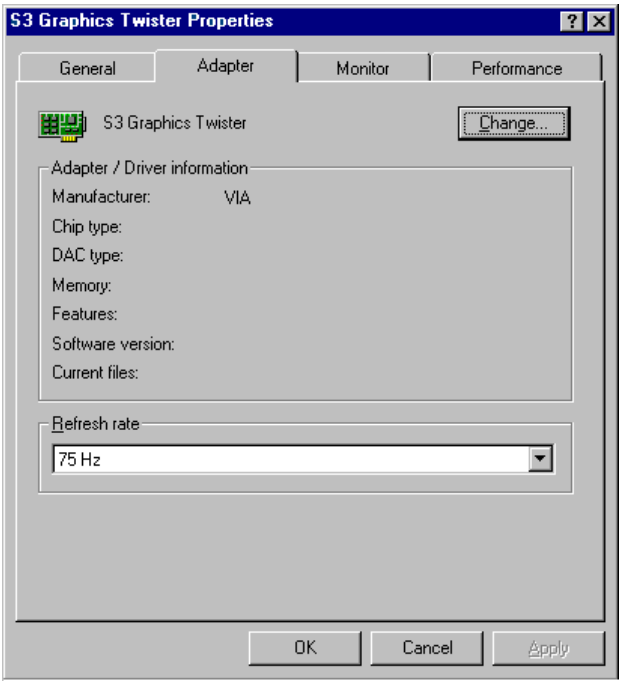
5. Insert the CD into the CD-ROM drive. Type in the path **D:\Biscuit\9575\VGA\Win9x_Me**
Then press “OK”



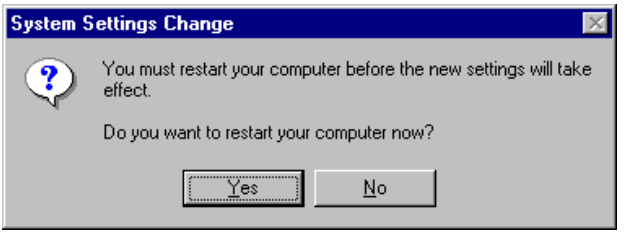
6. Select the highlighted item, then click “OK.”



7. "S3 Graphics Twister"appears under the adapter tab. Click the "Apply" button.



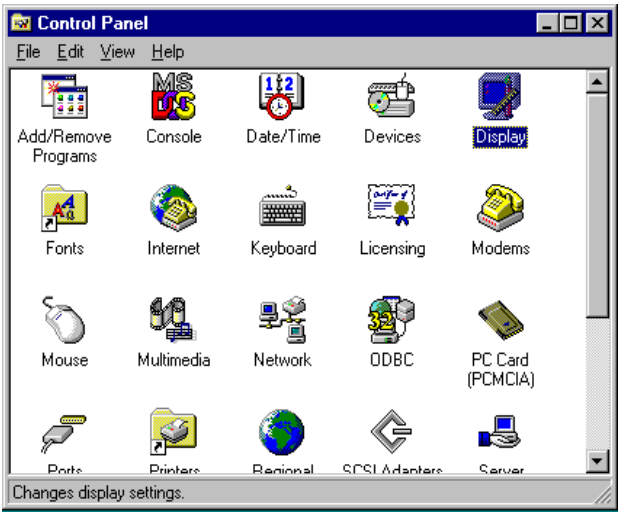
8. Press “Yes” to reboot.



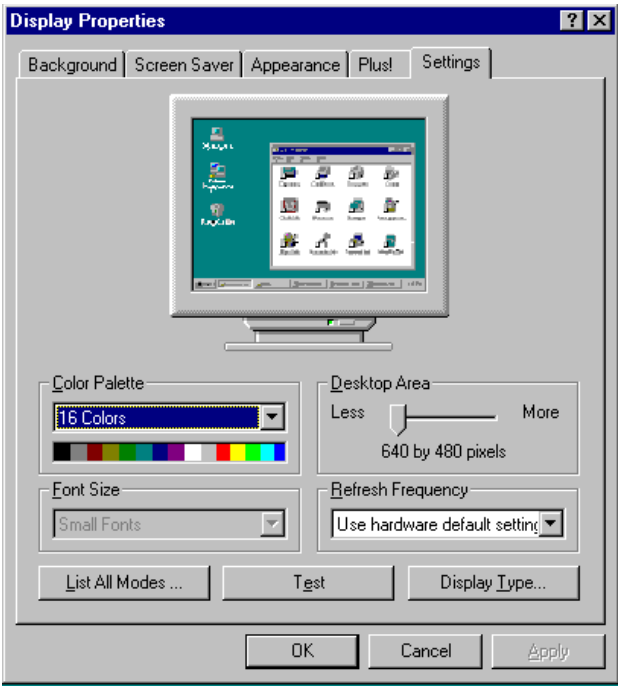
5.2.3 Installation for Windows NT

Note: *Service Pack X (X = 3, 4, 5, 6,...) must be installed first, before you install the Windows NT VGA driver.*

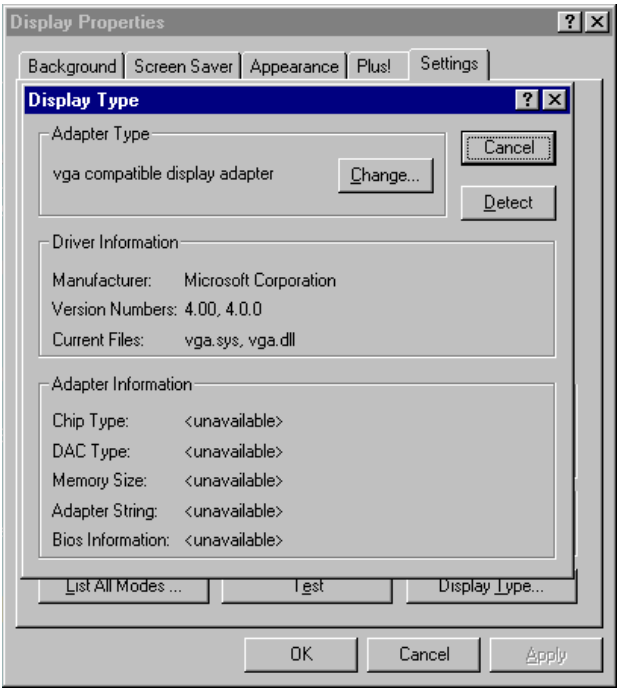
1. Select "Start", "Settings", "Control Panel" and double click the "Display" icon.



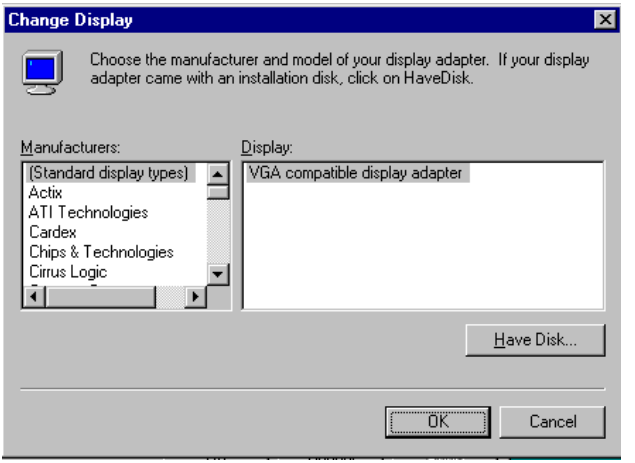
2. Choose the "Settings" tab, and press the "Display Type" button.



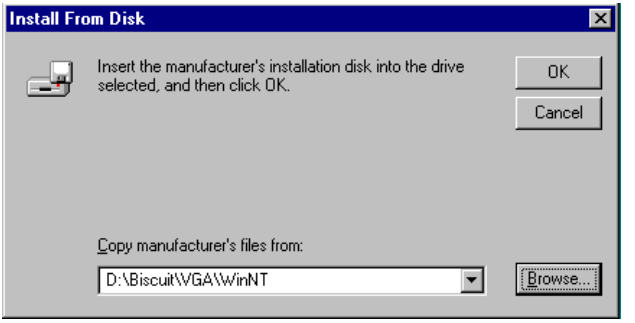
3. Press the "Change..." button.



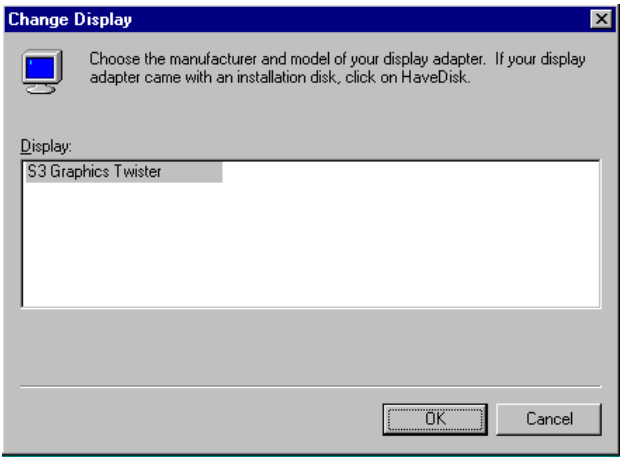
4. Click the "Have Disk..." button.



5. Type the path:
D:\Biscuit\VGA\WinNT
Press the "OK" button.



6. Select the highlighted item, and click the "OK" button.

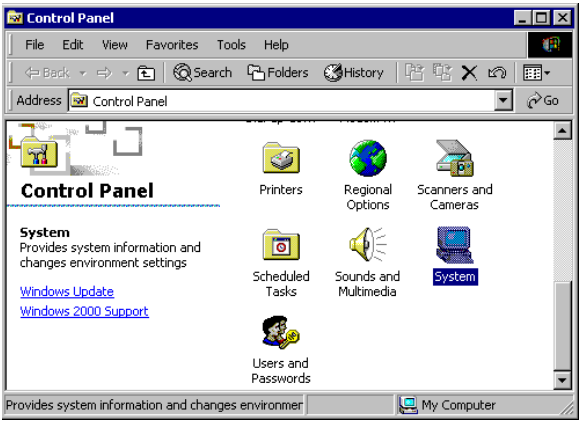


7. Press "Yes" to proceed.

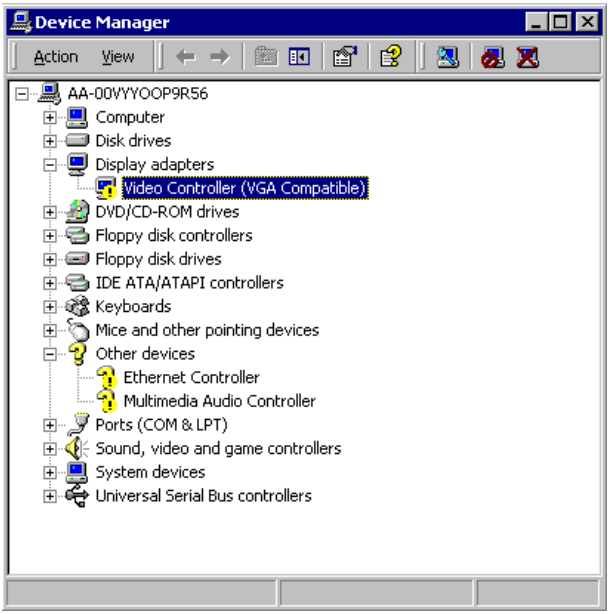
8. Press "OK" to reboot.

5.2.4 Installation for Windows 2000

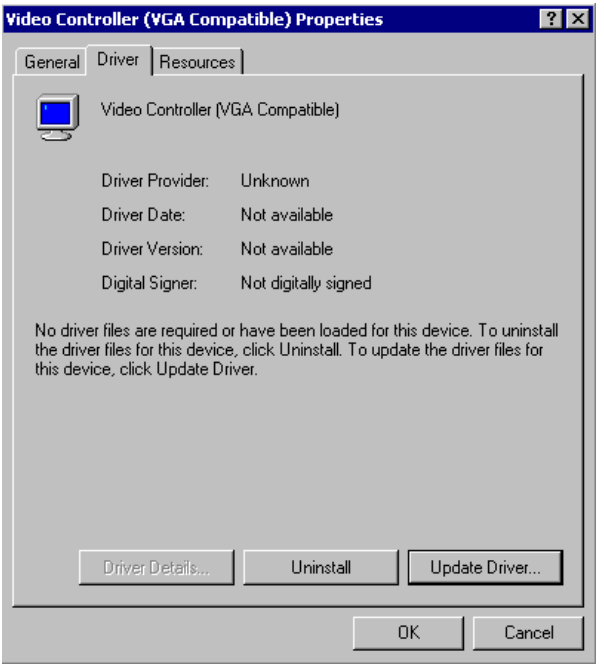
1. Select "System", "Settings", "Control Panel" and double click the "system" icon.



2. Choose the "Video Controller (VGA Compatible)" button.

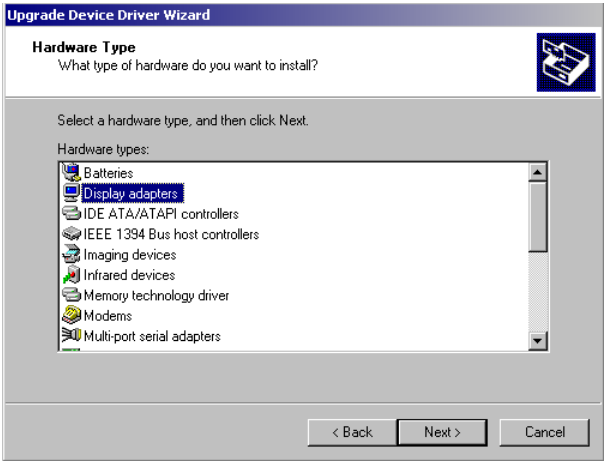


3. Choose the "Drive" button, press “Update Driver...” button.

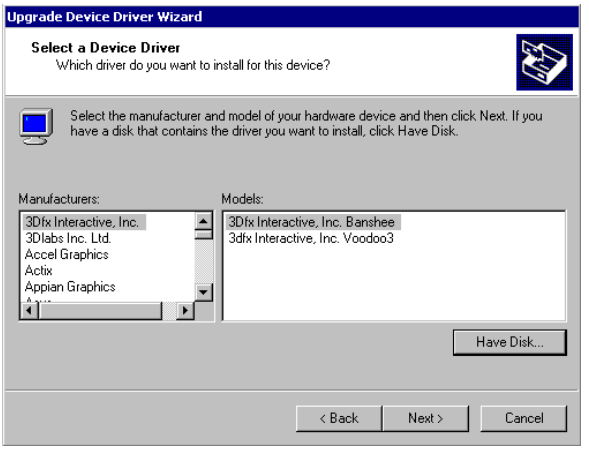


4. Choose "Display a list of..." , then press “Next” button.

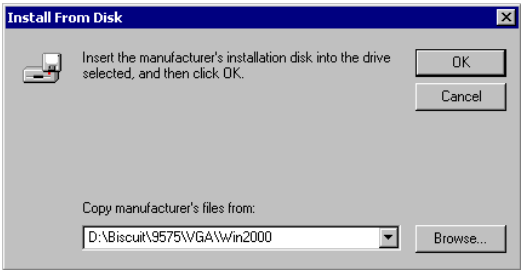
5. Choose “Display adapters”, press “Next” button.



6. Click the “Have Disk” button.



7. Type the path D:\Biscuit\9575\VGA\Win2000 press the “OK” button.

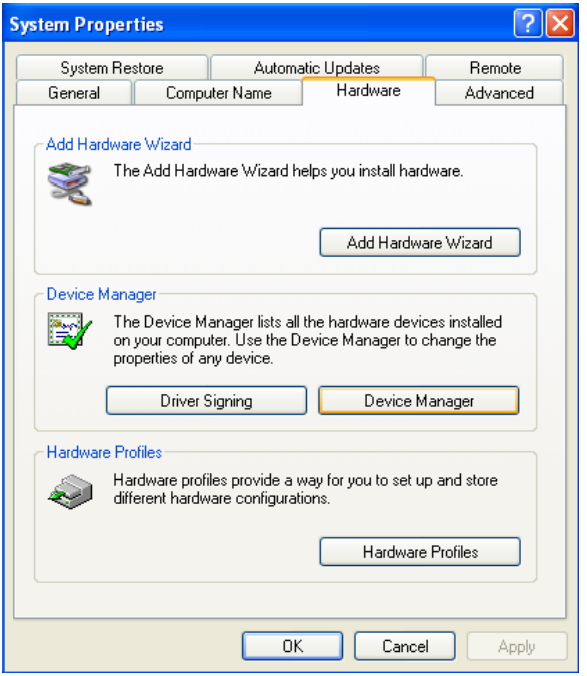


8. Press “Finish" to reboot.

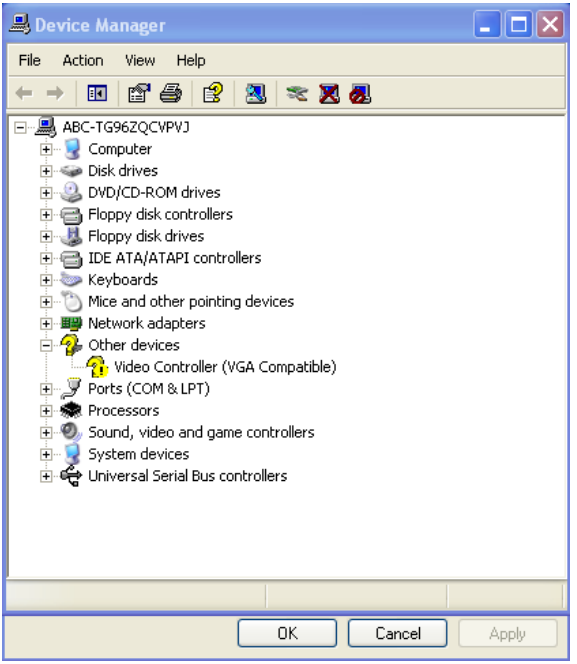
5.2.5 Installation for Windows XP

1. Select "System", "Settings", "Control Panel" and double click the "system" icon.

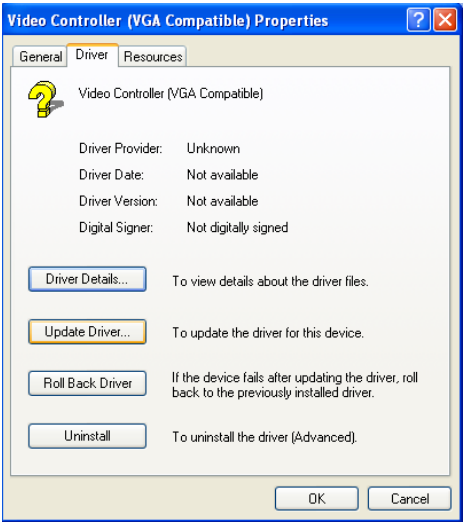
2. Choose “Hardware” and “Device Manager”, press “OK” button.



3. Choose “Video Controller (VGA Compatible), press “OK” button.

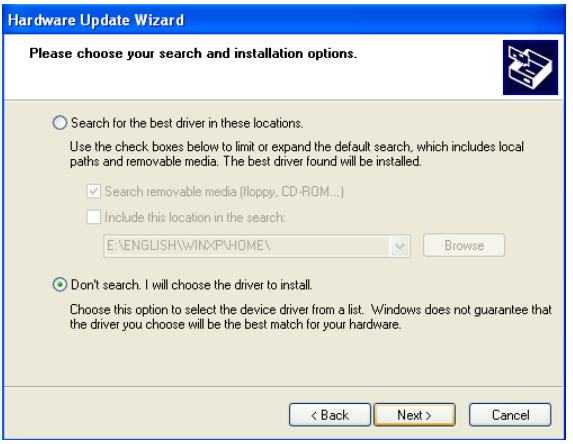


4. Choose "Driver", “Update Driver”, press “OK” button.

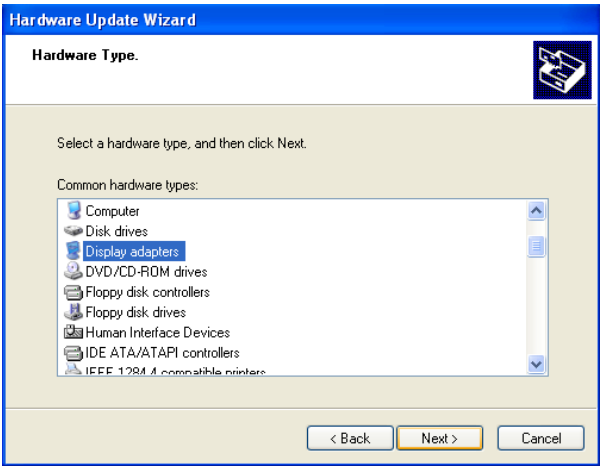


5. Choose “Install from a list.....” , press “Next”.

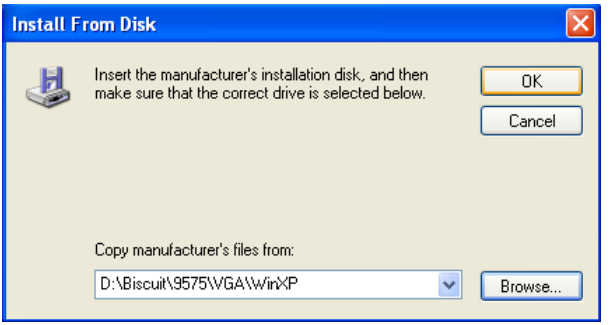
6. Choose “Don’t search. I will....”, press “Next” button.



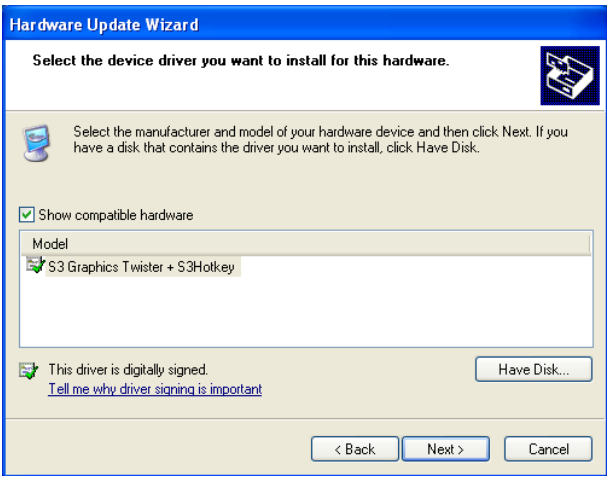
7. Choose “Display adapters”, press “Next” button.



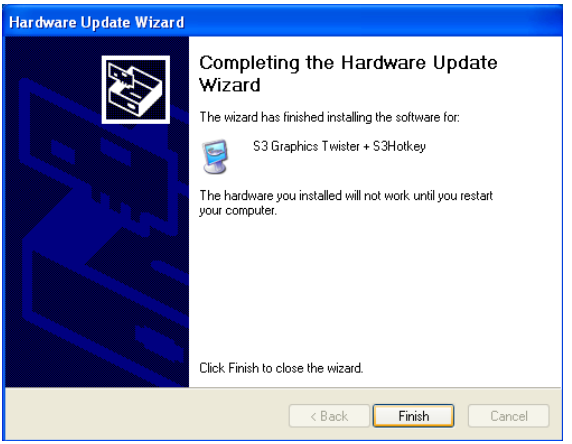
8. Type the path D:\Biscuit\9575\VGA\WinXP then press “OK” button.



9. Choose “S3 Graphics Twister + S3 Hotkey” then press “Next” button.



10. Press “Finish" to reboot.



5.3 Further Information

For further information about the AGP/VGA installation in your POS-761F, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

VIA website: www.via.com.tw

Advantech websites: www.advantech.com
www.advantech.com.tw

CHAPTER 6

Audio Setup

The POS-761F is equipped with an audio interface that records and plays back CD-quality audio. This chapter provides instructions for installing the software driversincluded on the audio driver diskettes.

Chapter 6 Audio Setup

6.1 Introduction

The POS-761F's on-board audio interface provides high-quality stereo sound and FM music synthesis (ESFM) by using the VIA VT82C686 audio controller from VIA. The audio interface can record, compress, and play back voice, sound, and music with built-in mixer control.

The POS-761F's on board audio interface also supports the Plug and Play (PnP) standard and provides PnP configuration for the audio, FM, and MPU-104 logical devices. It is compatible with Sound Blaster™; Sound Blaster Pro™ version 3.01, voice and music functions. The ESFM synthesizer is register compatible with the OPL3 and has extended capabilities.

6.2 DOS utilities

6.2.1 VIA Sound Blaster Pro compatible set up program

Please "Enable" the Sound Blaster setting in the BIOS before playing Sound Blaster compatible DOS games. To enable the settings in the BIOS:

INTEGRATED PERIPHERALS -> Onboard Legacy Audio

-> Sound Blaster (Disable -> Enable)

Chipset Feature Setup ->On Chip Sound (Disable-> Enable)

The Sound Blaster Pro compatible sound chip is integrated into the VIA PCI audio device in order to have Sound Blaster compatible DOS games running on the system.

If you want to play Sound Blaster compatible DOS games under the real mode MS-DOS or the "Restart in MS-DOS" from Win9x, then you should run this setup program to enable OPL3 MIDI music. Otherwise, the sound effects will be heard, but not the music. If you want to play legacy games in a Windows DOS Box, then you don't need to install this program.

6.2.2 VIA Sound Blaster Installation

Follow these steps to enable the Sound Blaster Pro compatible functions.

Enable the Sound Blaster first on the BIOS setting of the "Onboard Legacy Audio" and "On-Chip Sound".

Run the "Install.exe".

A:> INSTALL

The program will copy the relative files into the directory which you assign. Next, the program will insert the following new line into the AUTOEXEC.BAT and copy the original AUTOEXEC.BAT to AUTOEXEC.VIA.

C: \VIAUDIO\VIAUDIO.COM

Reboot the system when the installation is complete.

Uninstall by deleting the new line from the AUTOEXEC.BAT.

6.3 Driver installation

6.3.1 Before you begin

Please read the instructions in this chapter carefully before you attempt installation. The audio drivers for the POS-761F board are located on the audio driver CD. Run the supplied SETUP program to install the drivers; don't copy the files manually.

Note: The files on the software installation diskette are compressed. Do not attempt to install the drivers by copying the files manually. You must use the supplied SETUP program to install the drivers.

6.3.2 Windows 95/98 drivers

Step 1. Click "Start" and select "Settings". Click "Control Panel" and double-click "Add New Hardware".

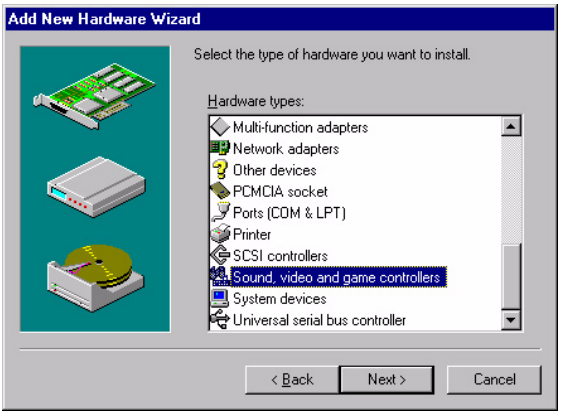
Step 2. In the Add New Hardware Wizard window, click "Next".

Step 3. In the following Add New Hardware Wizard window, click "Next" for Windows to search for Plug and Play devices.

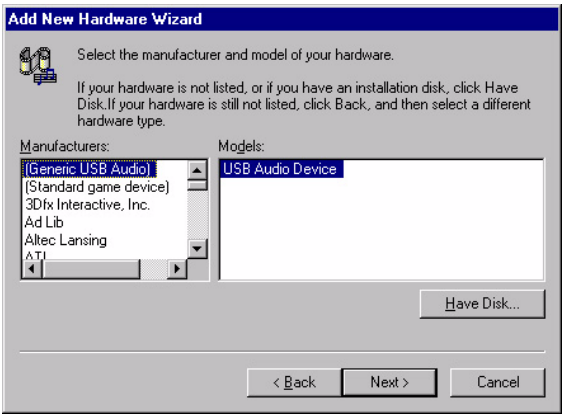
Step 4. In the following Add New Hardware Wizard window, select "No, the device isn't in the list."and click "Next".

Step 5. In the following Add New Hardware Wizard window, select "No, I want to select..." and click "Next".

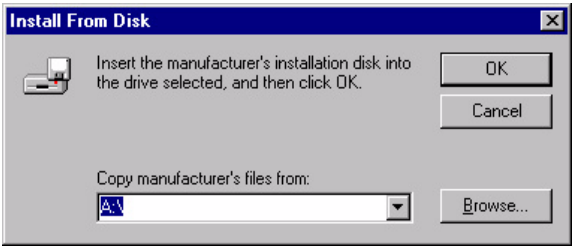
Step 6. In the following Add New Hardware Wizard window, select "Sound, video and game controllers" and click "Next".



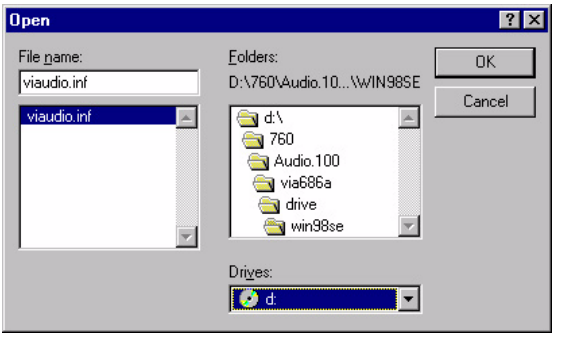
Step 7. In the following Add New Hardware Wizard window, click "Have Disk...".



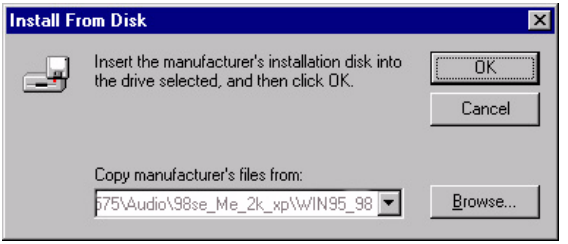
Step 8. In the Install From Disk window, click "Browse".



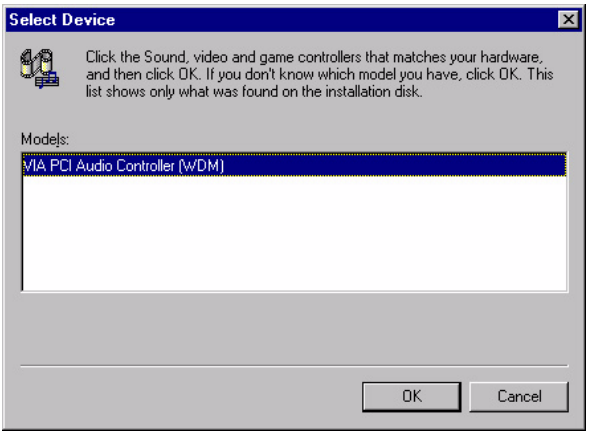
Step 9. In the Open window, select "D:\Biscuit\9575\Audio\98se_Me_2k_xp\WIN95_98.



Step 10. In the Install From Disk window, click" OK".

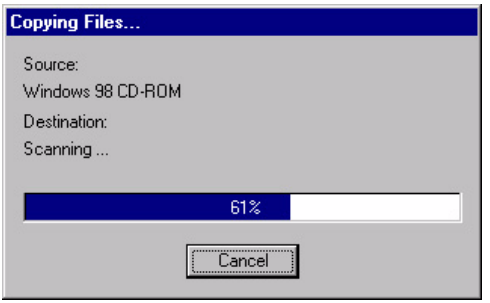


Step 11. In the Select Device window, select "VIA PCI Audio Controller (WDM)" and click "OK".



Step 12. In the Add New Hardware Wizard window, click "Next".

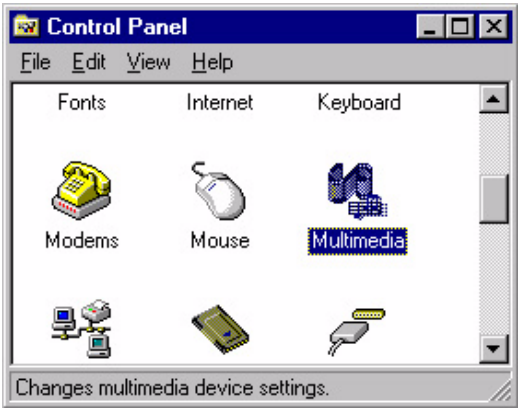
Step 13. The Copying Files... window will appear.



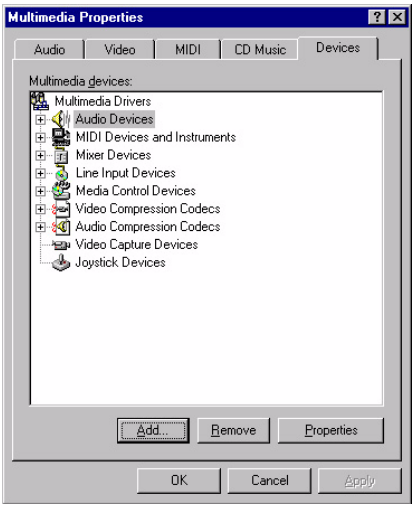
Step 14. In the Add New Hardware Wizard window, click "Finish". Then reboot the system.

6.3.3 Windows NT drivers

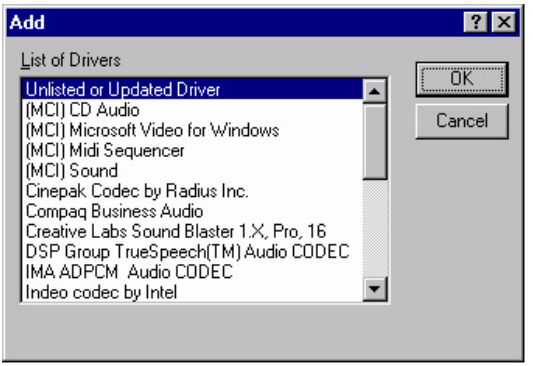
Step 1. Click "Start" and select "Settings". Click "Control Panel" and double-click "Multimedia".



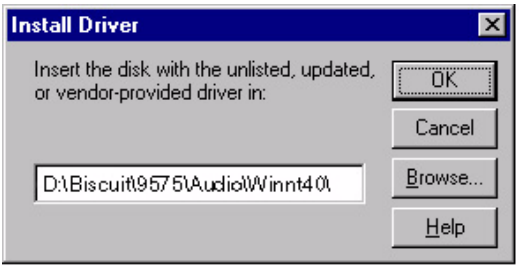
Step 2. In the Multimedia Properties window, select the "Devices" tab. Then select the "Audio Devices" item, and click "Add...".



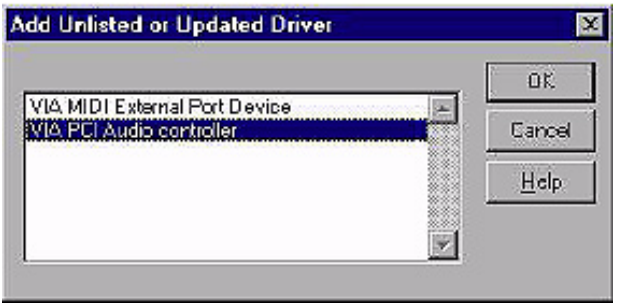
Step 3. In the Add window, select the "Unlisted..." item and click "OK".



Step 4. When the Install Driver window appears, insert the utility disc into the CD-ROM drive. Type: D:\Biscuit\9575\Audio\WinNT\ Then click "OK".



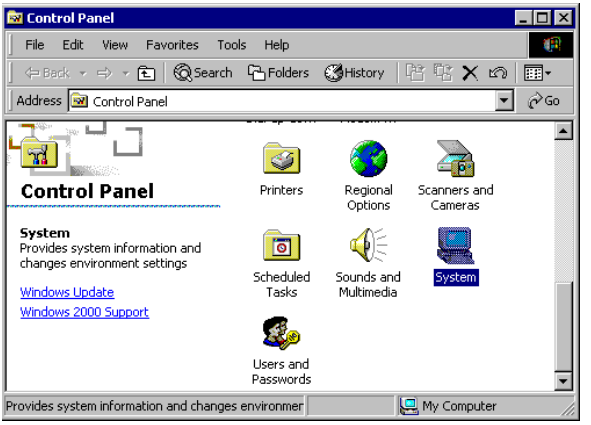
Step 5. In the Add Unlisted or Updated Driver window, select the "VIA PCI Audio controller" item. Then click "OK".



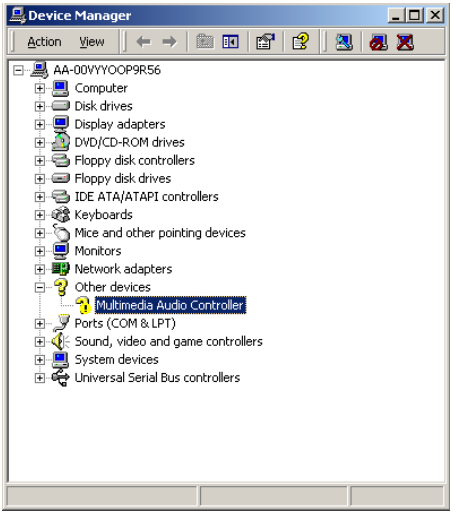
Step 6. In the System Setting Change window, click "Restart Now".

6.3.4 Windows 2000 Drivers

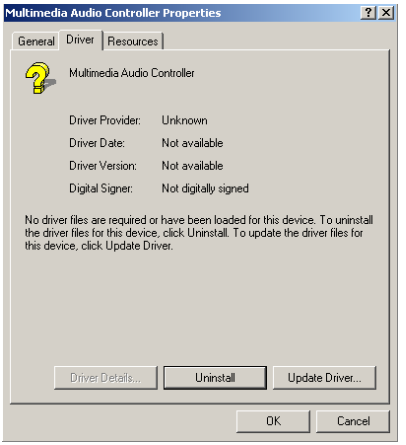
Step 1. Select “System”, “Setting”, “Control Panel” and double click “system” icon.



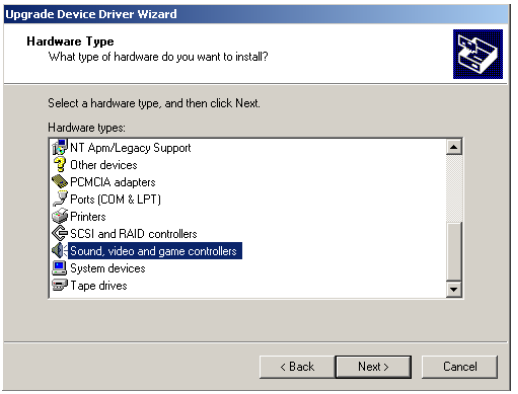
Step 2. Choose “Multimedia Audio Controller” button.



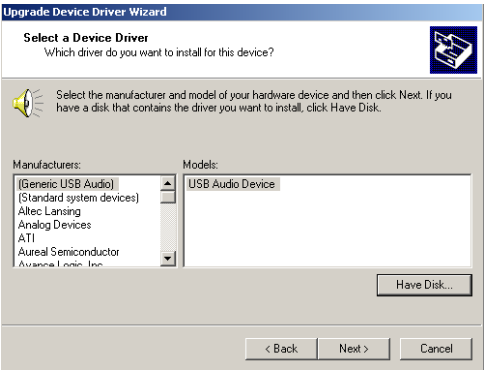
Step 3. Choose “Driver button, press “Update Driver” button.



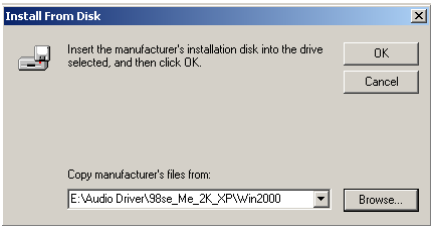
Step 4. Choose “Sound, video and game controllers”, press “Next”



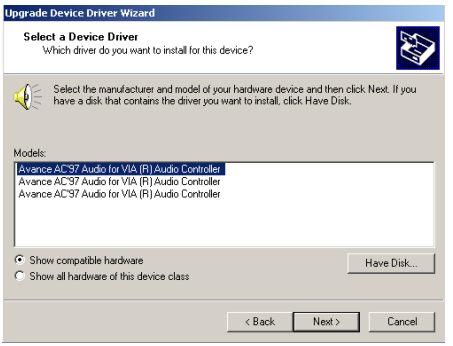
Step 5. Click the “Have Disk...” button



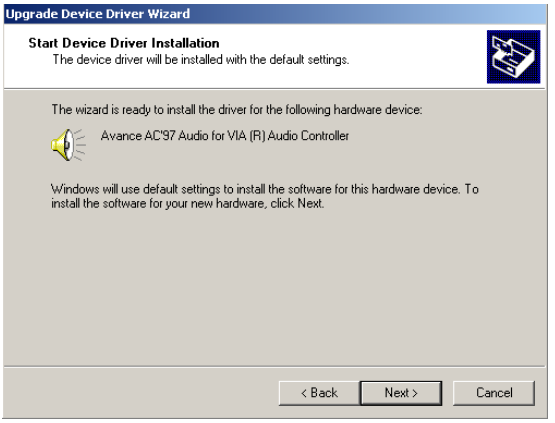
Step 6. Type the path D:\Biscuit\9575\Audio\98se_Me_2k_xp\Win2000 press the “ok” button.



Step 7. Click “Have Disk” button



Step 8. Press “Next” button



Step 9. Press “Finish” to reboot

CHAPTER 7

PCI Bus Ethernet Interface

This chapter provides information on Ethernet configuration.

- Introduction
- Installation of Ethernet driver for
  - MS-DOS
  - Windows 3.1
  - Windows 95
  - Windows 98
  - Windows 2000
  - Windows NT
- Further information

Chapter 7 PCI Bus Ethernet Interface

7.1 Introduction

The POS-761F is equipped with a high-performance 32-bit Ethernet chipset which is fully compliant with IEEE 802.3 100 Mbps CSMA/CD standards. It is supported by major network operating systems. It is also both 100Base-T and 10Base-T compatible. The medium type can be configured via the PQ8139.exe program included on the utility disk.

The Ethernet port provides a standard RJ-45 jack. The network boot feature can be utilized by incorporating the boot ROM image files for the appropriate network operating system. The boot ROM BIOS files are combined with system BIOS, which can be enabled/disabled in the BIOS setup.

7.2 Installation of Ethernet Driver

Before installing the Ethernet driver, note the procedures below. You must know which operating system you are using in your POS-761F, and then refer to the corresponding installation flow chart. Then just follow the steps described in the flow chart. You will quickly and successfully complete the installation, even if you are not familiar with instructions for MS-DOS or Windows.

.

Note: The windows illustrations in this chapter are examples only. You must follow the flow chart instructions and pay attention to the instructions which then appear on your screen.

7.2.1 Installation for MS-DOS and Windows 3.1

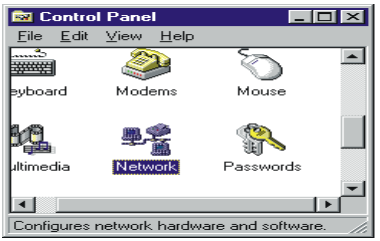
If you want to set up your Ethernet connection under the MS-DOS or Windows 3.1 environment, you should first check your server system model. For example, MS-NT, IBM-LAN server, and so on.

Then choose the correct driver to install in your panel PC.

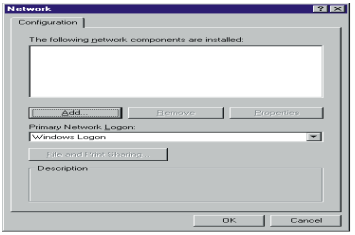
The installation procedures for various servers can be found on CD-ROM. The file path begins as: D:\POS\760\Lan\8139B\drive\wfw311

7.2.2 Installation for Windows 95

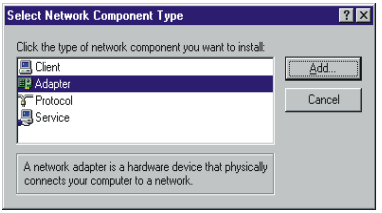
1. a. Select "Start", "Settings", "Control Panel".
   b. Double click "Network".



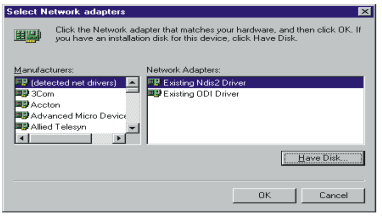
2. a. Click "Add" and prepare to install network functions.

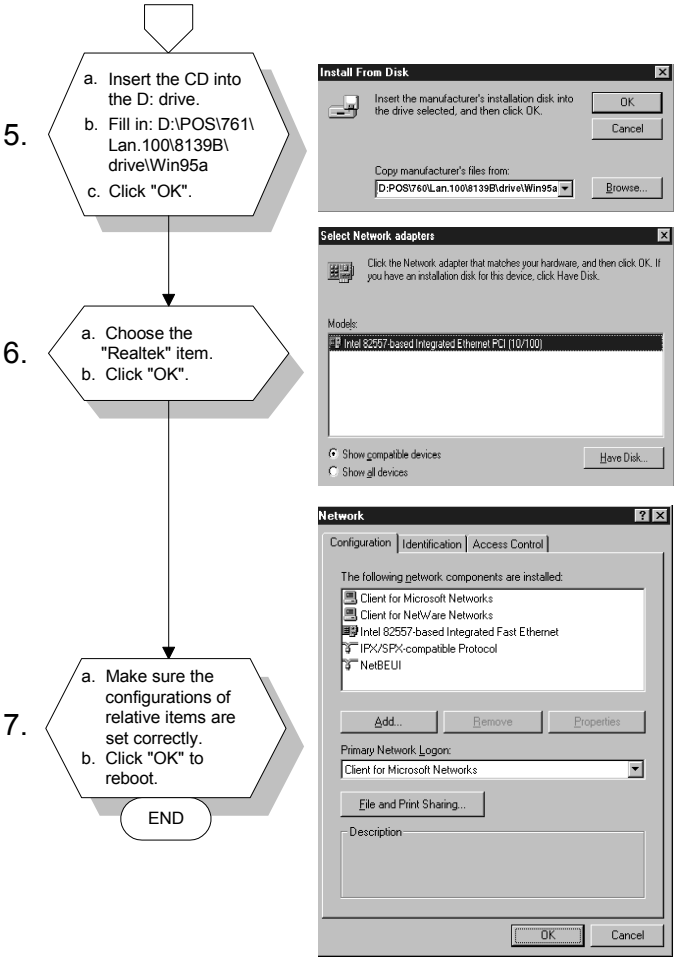


3. a. Select the "Adapter" item to add the Ethernet card.



4. a. Click "Have Disk" to install the driver.

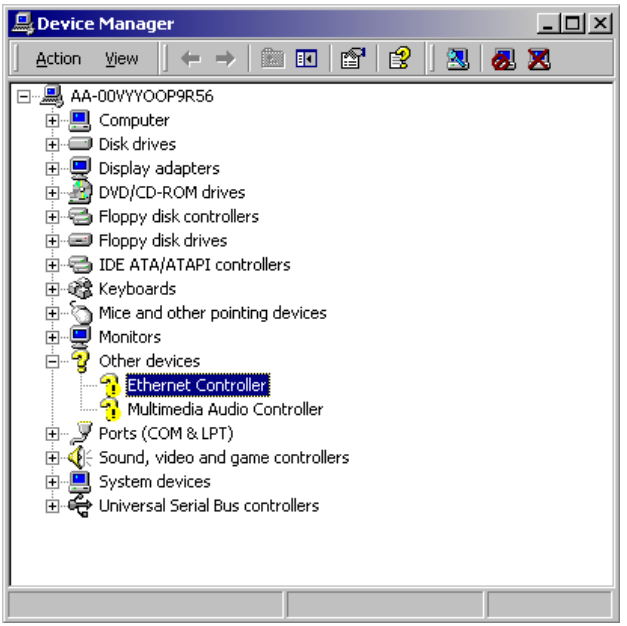




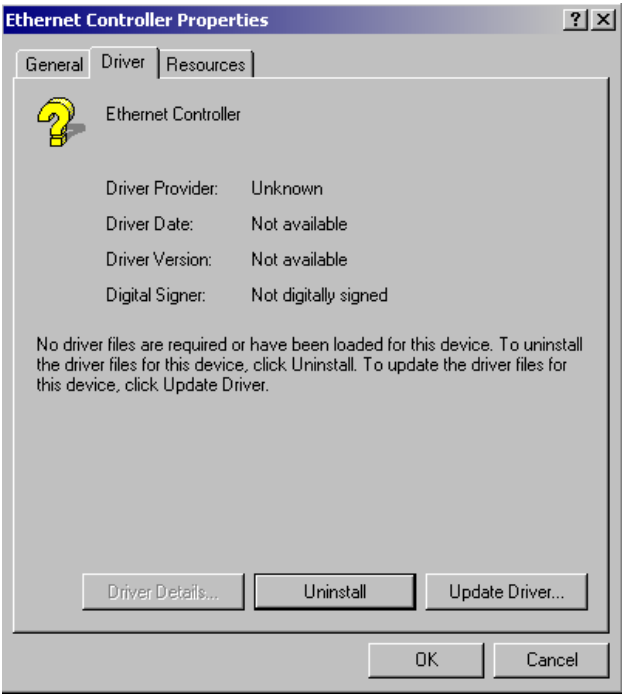
Note: *The correct file path for Windows 98 is: D:\POS\761\Lan.100\8139B\driver\Win98*

7.2.3 Installation for Windows 2000

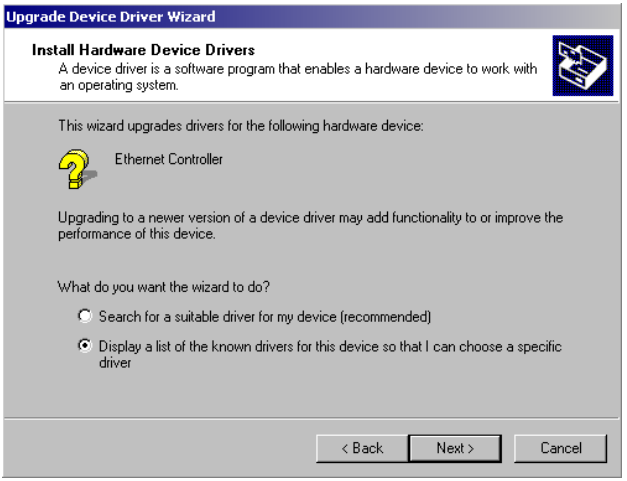
Step 1. Open Device Manager,



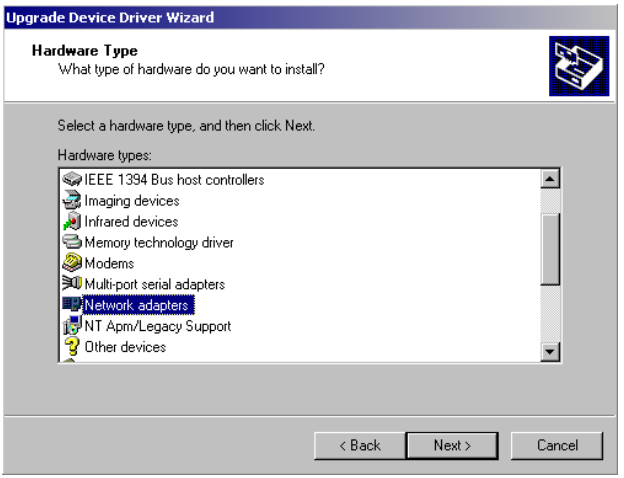
Step 2.


Ethernet Controller Properties
General
Driver
Resources
Ethernet Controller
Driver Provider:
Unknown
Driver Date:
Not available
Driver Version:
Not available
Digital Signer:
Not digitally signed
No driver files are required or have been loaded for this device. To uninstall the driver files for this device, click Uninstall. To update the driver files for this device, click Update Driver.
Driver Details...
Uninstall
Update Driver...
OK
Cancel

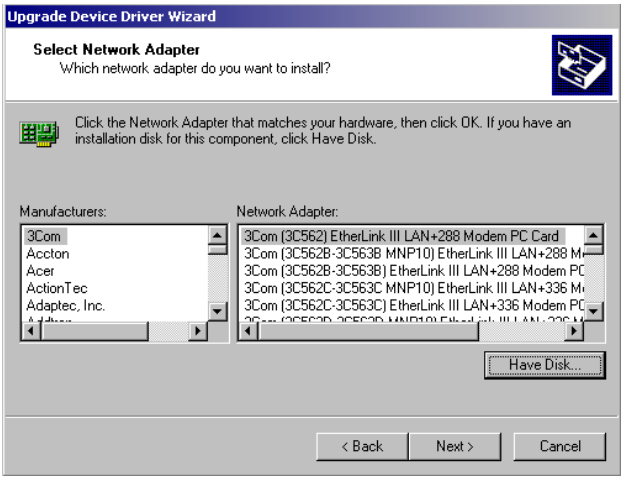
Step 3.


Upgrade Device Driver Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard upgrades drivers for the following hardware device:
Ethernet Controller
Upgrading to a newer version of a device driver may add functionality to or improve the performance of this device.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

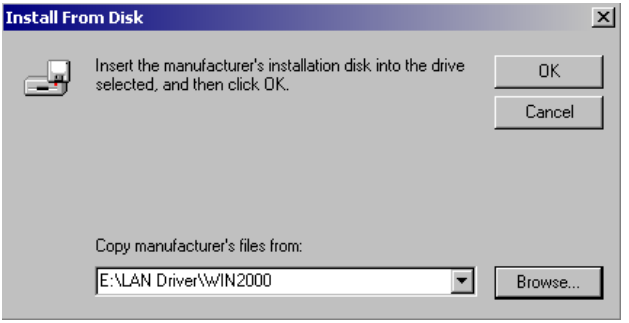
Step 4.


Upgrade Device Driver Wizard
Hardware Type
What type of hardware do you want to install?
Select a hardware type, and then click Next.
Hardware types:
IEEE 1394 Bus host controllers
Imaging devices
Infrared devices
Memory technology driver
Modems
Multi-port serial adapters
Network adapters
NT Apm/Legacy Support
Other devices
< Back
Next >
Cancel

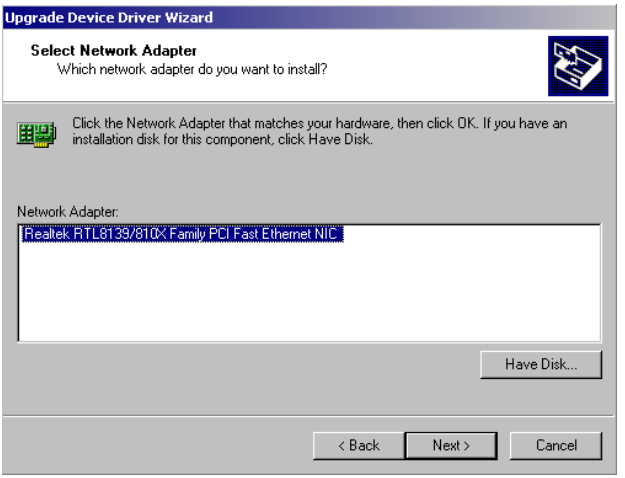
Step 5.


Upgrade Device Driver Wizard
Select Network Adapter
Which network adapter do you want to install?
Click the Network Adapter that matches your hardware, then click OK. If you have an installation disk for this component, click Have Disk.
Manufacturers:
Network Adapter:
3Com
Accton
Acer
ActionTec
Adaptec, Inc.
3Com (3C562) EtherLink III LAN+288 Modem PC Card
3Com (3C562B-3C563B MNP10) EtherLink III LAN+288 M
3Com (3C562B-3C563B) EtherLink III LAN+288 Modem PC
3Com (3C562C-3C563C MNP10) EtherLink III LAN+336 M
3Com (3C562C-3C563C) EtherLink III LAN+336 Modem PC
Have Disk...
< Back
Next >
Cancel

Step 6.


Install From Disk
Insert the manufacturer's installation disk into the drive selected, and then click OK.
OK
Cancel
Copy manufacturer's files from:
E:\LAN Driver\WIN2000
Browse...

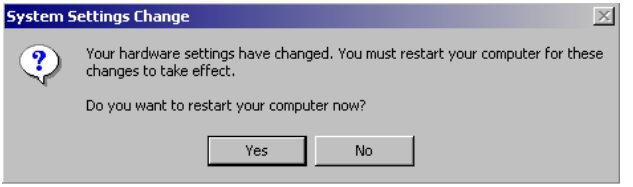
Step 7.


Upgrade Device Driver Wizard
Select Network Adapter
Which network adapter do you want to install?
Click the Network Adapter that matches your hardware, then click OK. If you have an installation disk for this component, click Have Disk.
Network Adapter:
Realtek RTL8139/810X Family PCI Fast Ethernet NIC
Have Disk...
< Back
Next >
Cancel

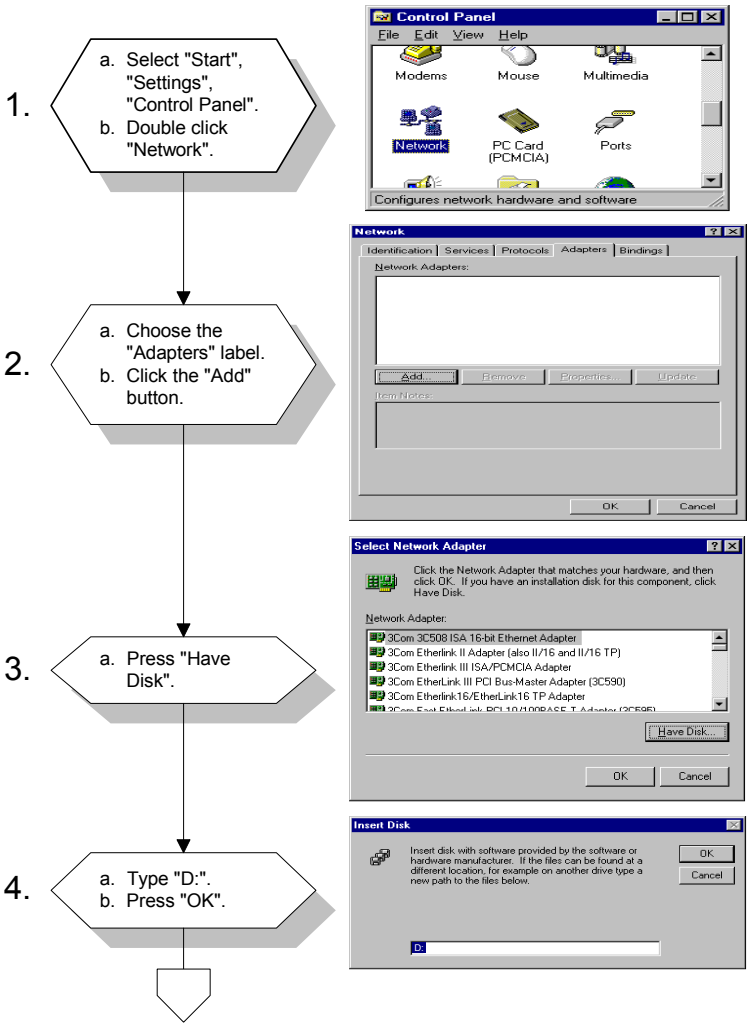
Step 8.

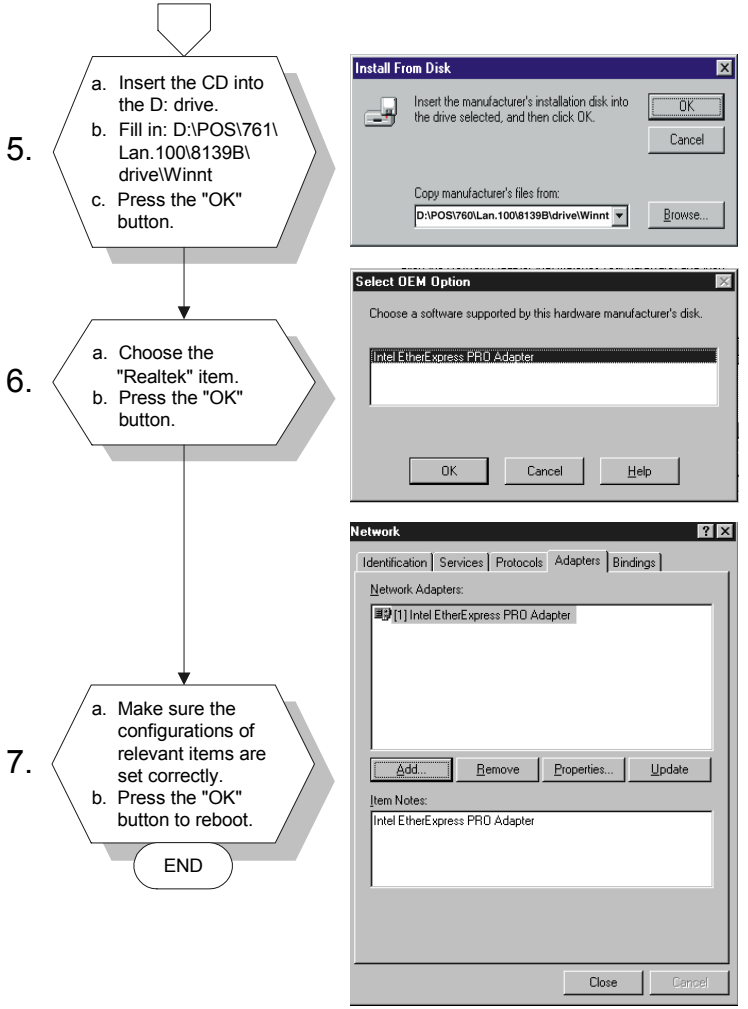

Upgrade Device Driver Wizard
Completing the Upgrade Device Driver Wizard
Realtek RTL8139/810X Family PCI Fast Ethernet NIC
The software for this device is now installed, but may not work correctly.
This device cannot start. (Code 10)
To close this wizard, click Finish.
< Back
Finish
Cancel

Step 9.


System Settings Change
Your hardware settings have changed. You must restart your computer for these changes to take effect.
Do you want to restart your computer now?
Yes
No

7.2.4 Installation for Windows NT




5.
a. Insert the CD into the D: drive.
b. Fill in: D:\POS\761\Lan.100\8139B\drive\Winnt
c. Press the "OK" button.
Install From Disk
Insert the manufacturer's installation disk into the drive selected, and then click OK.
OK
Cancel
Copy manufacturer's files from:
D:\POS\760\Lan.100\8139B\drive\Winnt
Browse...
6.
a. Choose the "Realtek" item.
b. Press the "OK" button.
Select OEM Option
Choose a software supported by this hardware manufacturer's disk.
Intel EtherExpress PRO Adapter
OK
Cancel
Help
7.
a. Make sure the configurations of relevant items are set correctly.
b. Press the "OK" button to reboot.
END
Network
Identification
Services
Protocols
Adapters
Bindings
Network Adapters:
[1] Intel EtherExpress PRO Adapter
Add...
Remove
Properties...
Update
Item Notes:
Intel EtherExpress PRO Adapter
Close
Cancel

b. Press the "OK" button to reboot.

7.3 Further information

Realtek website: www.realtek.com

Advantech websites:www.advantech.com

www.advantech.com.tw

Appendix A

Programming the Watchdog Timer

The POS-761F is equipped with a watchdog timer that resets the CPU or generates an interrupt if processing comes to a standstill for whatever reason. This feature ensures system reliability in industrial standalone or unmanned environments.

Appendix A Programming the Watchdog Timer

A.1 Programming the watchdog timer

In order to program the watchdog timer, you must write a program which writes I/O port address 443 (hex). The output data is a value of time interval. The value range is from 01(hex) to 3E(hex), and the related time interval is 1 sec. to 62 sec.

Data	Time Interval
01	1 sec.
02	2 sec.
03	3 sec.
04	4 sec.
	.
	.
	.
3E	62 sec.

After data entry, your program must refresh the watchdog timer by rewriting the I/O port 443 (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should read I/O port 443 (hex).

The following example shows how you might program the watchdog timer in BASIC:

```
10  REM  Watchdog timer example program
20  OUT &H443, data  REM  Start and restart the watchdog
30  GOSUB 1000  REM  Your application task #1
40  OUT &H443, data  REM  Reset the timer
50  GOSUB 2000  REM  Your application task #2
60  OUT &H443, data  REM  Reset the timer
70  X=INP (&H443) REM  Disable the watchdog timer
80  END
1000 REM  Subroutine #1, your application task
```

.

.

.

```
1070 RETURN
2000 REM  Subroutine #2, your application task
```

.

.

.

```
2090 RETURN
```

Appendix B

Jumper Settings

The POS-761 is equipped with a watchdog timer that resets the CPU or generates an interrupt if processing comes to a standstill for any reason. This feature ensures system reliability in industrial standalone or unmanned environments.

Appendix B POS-761 Jumper Settings

Table B.1: Connectors		
1.	CN1	System fan connect
2.	CN2	CD IN connect
3.	CN3	Audio connect
4.	CN4	First 6 Pins Mini DIM for KB
5.	CN5	AT Power connect
6.	CN6	Int. KB/MOUSE connect
7.	CN7	ATX Power connect
8.	CN8	Second LAN connect
9.	CN9	Second 6 Pins Mini DIM for Mouse
10.	CN10	Secondary IDE
11.	CN11	First LAN connect
12.	CN12	Primary IDE
13.	CN13	FDD connect
14.	CN14	COM2 connect
15.	CN15	
16.	CN16	COM2 D-TYPE 9 Pins connect
17.	CN17	USB1.0 3 & 4 connect
18.	CN18	PISA Slot
19.	CN19	CPU FAN
20.	CN20	COM1 D-TYPE 9 Pins connect
21.	CN21	COM1 connect
22.	CN22	COM4 connect
23.	CN24	LVDS connect
24.	CN25	COM3 connect
25.	CN26	USB2.0 1 & 2 connect
26.	CN27	USB2.0 3 & 4 connect
27.	CN28	LPT1 D-TYPE 25 Pins connect
28.	CN29	LPT1 connect
29.	CN30	LPT2 connect
30.	CN31	For LCD 36 Bits connect

Table B.1: Connectors		
31.	CN32	LCD Brightness controller connect
32.	CN33	LCD Contrast controller connect
33.	CN34	Backlight connect
34.	CN35	For LCD 18 Bits connect
35.	CN36	VGA D-TYPE 15 Pins connect
36.	CN37	VGA connect
37.	CN38	I2C Bus
38.	CN39	Compact Flash(Secondary IDE Master)
39.	J1	Mouse and IRQ12 function select
40.	J2	Setting CN9 DATSEL and CLKSEL function
41.	J4	Clear CMOS
42.	J5	DOC2K and DIO address select
43.	J6	Front pane
44.	J7	DIO connect
45.	J8	CF card power
46.	J9	SIR connect
47.	J10,J11,J12	Setting COM2 RS232/RS422/RS485 function
48.	J13	Setting WatchDog trigger event
49.	J14	COM3 and COM4 power select
50.	J15	COM1 and COM2 pin 9 function select
51.	J16	COM1 and COM2 power select
52.	J17	COM3 and COM4 pin 9 function select
53.	J18	FIR connect
54.	J19	Setting Enable backlight signal level
55.	J20	Setting LCD Power
56.	BT1	BATTERY SOCKET
57.	DIMM1	SDRAM Socket
58.	DIMM2	SDRAM Socket
59.	U2	DOC2000 socket
60.	U26	Socket 370 for PIII CPU

B.1 CN1 System FAN connector

1	2	3
GND	VCC12	Detect FAN speed

B.2 CN2 CD IN connector

1	2	3	4
CDR	GND	GND	CDL

B.3 CN3 Audio connector

GND or SPKR+	1	2	SPKR-
GND or SPKL+	3	4	SPKL-
LINE OUT R	5	6	LINE OUT L
GND	7	8	GND
LINE IN R	9	10	LINE IN L
GND	11	12	GND
NC	13	14	MIC2
MIC1	15	16	GND

B.4 CN4 First 6 Pins Mini DIM for KB

1	KBDAT
2	PMDAT
3	GND
4	VCC
5	KBCLK
6	PMCLK

B.5 CN6 Int. KB/MOUSE connect

1	KBCLK
2	KBDAT
3	PMCLK
4	GND
5	VCC
6	PMDAT

B.6 CN8 Second LAN connect

VCC	1	2	LINK LED
RX+	3	4	RX-
ACTIVE LED	5	6	75
NC	7	8	75
TX+	9	10	TX-

B.7 CN9 Second 6 Pins Mini DIM for Mouse

1	DATSEL
2	PMDAT
3	GND
4	VCC
5	CLKSEL
6	PMCLK

B.8 CN10 Secondary IDE

RESET	1	2	GND
D7	3	4	D8
D6	5	6	D9
D5	7	8	D10
D4	9	10	D11
D3	11	12	D12
D2	13	14	D13
D1	15	16	D14
D0	17	18	D15
GND	19	20	NC
DREQ	21	22	GND
IOW	23	24	GND
IOR	25	26	GND
RDY	27	28	NC
DACK	29	30	GND
IRQ	31	32	NC
A1	33	34	DIAG
A0	35	36	A2
CS1	37	38	CS2
DASP	39	40	GND
VCC	41	42	VCC
GND	43	44	NC

B.9 CN11 First LAN connect

TX+	1	8	75
TX-	2	9	VCC
RX+	3	10	LINK LED
75	4	11	VCC
75	5	12	ACTIVE LED
RX-	6	13	GND
75	7	14	GND

B.10 CN12 Primary IDE

RESET	1	2	GND
D7	3	4	D8
D6	5	6	D9
D5	7	8	D10
D4	9	10	D11
D3	11	12	D12
D2	13	14	D13
D1	15	16	D14
D0	17	18	D15
GND	19	20	NC
DREQ	21	22	GND
IOW	23	24	GND
IOR	25	26	GND
RDY	27	28	NC
DACK	29	30	GND
IRQ	31	32	NC
A1	33	34	DIAG
A0	35	36	A2
CS1	37	38	CS2
DASP	39	40	GND

B.11 CN14 COM2 connect

DCD & TX-	1	2	DSR
RX & TX+	3	4	RTS
TX & RX+	5	6	CTS
DTR & RX-	7	8	RI & POWER
GND	9	10	GND

B.12 CN15 USB1.0 1 & 2 connect

VCC	1	2	VCC
DAT1-	3	4	DAT2-
DAT1+	5	6	DAT2+
GND	7	8	GND
GND	9	10	GND

B.13 CN16 COM2 D-TYPE 9 Pins connect

DCD & TX-	1	2	RX & TX+
TX & RX+	3	4	DTR & RX-
GND	5	6	DSR
RTS	7	8	CTS
RI & POWER	9		

B.14 CN17 USB1.0 3 & 4 connect

VCC	1	2	VCC
DAT3-	3	4	DAT4-
DAT3+	5	6	DAT4+
GND	7	8	GND
GND	9	10	GND

B.15 CN19 CPU FAN

1	2	3
GND	VCC12	Detect FAN speed

B.16 CN20 COM1 D-TYPE 9 Pins connect

DCD	1	2	RX
TX	3	4	DTR
GND	5	6	DSR
RTS	7	8	CTS
RI & POWER	9		

B.17 CN21 COM1 connect

DCD	1	2	DSR
RX	3	4	RTS
TX	5	6	CTS
DTR	7	8	RI & POWER
GND	9	10	GND

B.18 CN22 COM4 connect

DCD	1	2	DSR
RX	3	4	RTS
TX	5	6	CTS
DTR	7	8	RI

B.19 CN24 LVDS connect

VCC	1	2	VCC
GND	3	4	GND
VCC3	5	6	VCC3
NC	7	8	GND
TXCK1-	9	10	TXCK1+
NC	11	12	NC
TXCK0-	13	14	TXCK0+
NC	15	16	NC
NC	17	18	NC
TX10-	19	20	TX10+
TX11-	21	22	TX11+
NC	23	24	NC
TX00-	25	26	TX00+
TX01-	27	28	TX01+
TX02-	29	30	TX02+
NC	31	32	NC
GND	33	34	GND
NC	35	36	TX12+
NC	37	38	TX12-
NC	39	40	GND

B.20 CN25 COM3 connect

DCD	1	2	DSR
RX	3	4	RTS
TX	5	6	CTS
DTR	7	8	RI
GND	9	10	GND

B.21 CN26 USB2.0 1 & 2 connect

VCC	1	2	VCC
DAT1-	3	4	DAT2-
DAT1+	5	6	DAT2+
GND	7	8	GND
GND	9	10	GND

B.22 CN27 USB2.0 3 & 4 connect

VCC	1	2	VCC
DAT3-	3	4	DAT4-
DAT3+	5	6	DAT4+
GND	7	8	GND
GND	9	10	GND

B.23 CN28 LPT1 D-TYPE 25 Pins connect

STB	1	14	AFD
PD0	2	15	ERR
PD1	3	16	INIT
PD2	4	17	SLIN
PD3	5	18	GND
PD4	6	19	GND
PD5	7	20	GND
PD6	8	21	GND
PD7	9	22	GND
ACK	10	23	GND
BUSY	11	24	GND
PE	12	25	GND
SLCT	13		

B.24 CN29 LPT1 connect

STB	1	2	AFD
PD0	3	4	ERR
PD1	5	6	INIT
PD2	7	8	SLIN
PD3	9	10	GND
PD4	11	12	GND
PD5	13	14	GND
PD6	15	16	GND
PD7	17	18	GND
ACK	19	20	GND
BUSY	21	22	GND
PE	23	24	GND
SLCT	25	26	NC

B.25 CN30 LPT2 connect

STB	1	2	AFD
PD0	3	4	ERR
PD1	5	6	INIT
PD2	7	8	SLIN
PD3	9	10	GND
PD4	11	12	GND
PD5	13	14	GND
PD6	15	16	GND
PD7	17	18	GND
ACK	19	20	GND
BUSY	21	22	GND
PE	23	24	GND
SLCT	25	26	NC

B.26 CN31 For LCD 36 Bits connect

LCD Power	1	2	LCD Power
FD24	3	4	FD25
FD26	5	6	FD27
FD28	7	8	FD29
FD30	9	10	FD31
FD32	11	12	FD33
FD34	13	14	FD35
GND	15	16	GND

B.27 CN32 LCD Brightness controller connect

1	Hi
2	Brightness
3	Low

B.28 CN33 LCD Contrast controller connect

1	Hi
2	Contrast
3	Low

B.29 CN34 Backlight connect

1	VCC12
2	GND
3	Enable Backlight
4	Brightness
5	VCC

B.30 CN35 For LCD 18 Bits connect

VCC12	1	2	VCC12
GND	3	4	GND
LCD Power	5	6	LCD Power
Contrast	7	8	GND
FD0	9	10	FD1
FD2	11	12	FD3
FD4	13	14	FD5
FD6	15	16	FD7
FD8	17	18	FD9
FD10	19	20	FD11
FD12	21	22	FD13
FD14	23	24	FD15
FD16	25	26	FD17
FD18	27	28	FD19
FD20	29	30	FD21
FD22	31	32	FD23
GND	33	34	GND
Shift CLK	35	36	FLM
DE	37	38	LP
GND	39	40	Enable VEE

NC	41	42	NC
Enable LCD Power	43	44	NC

B.31 CN36 VGA D-TYPE 15 Pins connect

R	1	9	NC
G	2	10	GND
B	3	11	NC
NC	4	12	SMB DATA
GND	5	13	HSYNC
GND	6	14	VSYNC
GND	7	15	SMB CLK
GND	8		

B.32 CN37 VGA connect

R	1	2	SMB DATA
G	3	4	GND
B	5	6	SMB CLK
NC	7	8	NC
GND	9	10	HSYNC
GND	11	12	VSYNC
GND	13	14	NC
GND	15	16	NC

B.33 CN38 I2C Bus

1	2	3	4
GND	I2C DATA	I2C CLK	VCC3

B.34 CN39 Compact Flash(Secondary IDE Master)

GND	1	26	CD1
D3	2	27	D11
D4	3	28	D12
D5	4	29	D13
D6	5	30	D14
D7	6	31	D15
CS1	7	32	CS2
NC	8	33	VS1
OE	9	34	IOR
NC	10	35	IOW
NC	11	36	WE
NC	12	37	IRQ
CF Power	13	38	CF Power
NC	14	39	NC
NC	15	40	NC
NC	16	41	RESET
NC	17	42	RDY
A2	18	43	DREQ
A1	19	44	DACK
A0	20	45	DASP
D0	21	46	DIAG
D1	22	47	D8
D2	23	48	D9
NC	24	49	D10
CD2	25	50	GND
GND	9	10	GND

B.35 J1 Mouse and IRQ12 function select

1~2	2~3
PMDAT	IRQ12

B.36 J2 Setting CN9 DATSEL and CLKSEL function

KBCLK	1	2	KBDAT
CLKSEL	3	4	DATSEL
PMCLK	5	6	PMDAT

B.37 J4 Clear CMOS

1~2	2~3
RTC POWER	Clear CMOS

B.38 J5 DOC2K address select

MEMORY ADR.	J44 5~6 PIN	J44 3~4PIN	J44 1~2 PIN
C8000	0	0	0
CA000	0	0	1
CC000	0	1	0
CE000	0	1	1
D0000	1	0	0
D2000	1	0	1
D4000	1	1	0
D6000	1	1	1

B.39 DIO address select

IO ADR.	J44 9~10 PIN	J44 7~8 PIN
200	0	0
210	0	1
220	1	0
230	1	1

B.40 J6 Front pane

PWR+	1	2	ESP+	GND	11	12	HD-
NC	3	4	GND	PWBN	13	14	HD+
PWR-	5	6	IBZ-	Lan led1	15	16	NC
NC	7	8	ESP-	GND	17	18	RST+
GND	9	10	NC	Lan led2	19	20	RST-

B.41 J7 DIO connect

IN0	1	2	VCC
IN1	3	4	OUT0
IN2	5	6	GND

IN3	7	8	OUT1
GND	9	10	+12V
NC	11	12	NC
OUT3	13	14	GND
OUT2	15	16	+12V

B.42 J8 CF card power

VCC	1	2	VCC
CF Power	3	4	CF Power
VCC3	5	6	VCC3

B.43 J9 SIR connect

1	2	3	4	5
VCC	NC	IRRX	GND	IRTX

B.44 J10,J11,J12 COM2 RS232/422/485 function

	RS232	RS422	RS485
J10	5 ~ 6	3 ~ 4	1 ~ 2
J11	1 ~ 3 & 2 ~ 4	3 ~ 5 & 4 ~ 6	3 ~ 5 & 4 ~ 6
J12	1 ~ 3 & 2 ~ 4	3 ~ 5 & 4 ~ 6	3 ~ 5 & 4 ~ 6

B.45 J13 Setting WatchDog trigger event

1~2	2~3
RESET	IRQ11

B.46 J14 COM3 and COM4 power select

	COM4	COM3
VCC	1~3 pin	2~4 pin
+12V	3~5 pin	4~6 pin

B.47 J15 COM1 and COM2 pin 9 function select

	COM2	COM1
POWER	1~3 pin	2~4 pin
RI	3~5 pin	4~6 pin

B.48 J16 COM1 and COM2 power select

	COM2	COM1
VCC	1~3 pin	2~4 pin
+12V	3~5 pin	4~6 pin

B.49 J17 COM3 and COM4 pin 9 function select

	COM4	COM3
POWER	1~3 pin	2~4 pin
RI	3~5 pin	4~6 pin

B.50 J18 FIR connect

1	2	3	4	5
VCC	FIRRX	IRRX	GND	FIRTX

B.51 J19 Setting Enable backlight signal level

Enable Backlight level for Low	1~3 pin
Enable Backlight level for Hi	3~5 pin

B.52 J20 Setting LCD Power

VCC	1~3 pin	2~4 pin
VCC3	3~5 pin	4~6 pin

B.53 BT1 BATTERY SOCKET

1	BAT+
2	BAT-

Use BR2032

(A) U2

B.54 DOC2000 socket

VCC	1	32	VCC
NC	2	31	PGM
NC	3	30	VCC
SA12	4	29	NC
SA7	5	28	NC
SA6	6	27	SA8
SA5	7	26	SA9
SA4	8	25	SA11
SA3	9	24	OE
SA2	10	23	SA10
SA1	11	22	CE
SA0	12	21	SD7
SD0	13	20	SD6
SD1	14	19	SD5
SD2	15	18	SD4
GND	16	17	SD3

Table B.2: IRQ table	
IRQ1	Keyboard/Mouse
IRQ2	Reserved
IRQ3	COM2
IRQ4	COM1
IRQ5	Legacy Audio, COM4
IRQ6	FDC
IRQ7	LPT1
IRQ8	COM3
IRQ9	LPT2
IRQ10	COM3
IRQ11	Reserved
IRQ12	PS2 Mouse
IRQ13	NPU
IRQ14	Primary IDE
IRQ15	Secondary IDE

Appendix C

DOC® 2000 Installation Guide

This appendix contains information on the DiskOnChip® 2000 quick installation guide. It includes:

- DiskOnChip® 2000 installation instructions
- Additional information and assistance

Appendix C DOC® 2000 Installation Guide

C.1 DiskOnChip®2000 Quick Installation Guide

C.1.1 DiskOnChip® 2000 installation instructions

1. Make sure the target platform is powered OFF.
2. Plug the DiskOnChip® 2000 device into its socket. Verify the direction is correct (pin 1 of the DiskOnChip 2000 is aligned with pin 1 of the socket).
3. Power up the system.
4. During power up you may observe the messages displayed by the DiskOnChip 2000 when its drivers are automatically loaded into the system's memory.
5. At this stage the DiskOnChip 2000 can be accessed as any disk in the system.
6. If the DiskOnChip 2000 is the only disk in the system, it will appear as the first disk (drive C: in DOS).
7. If there are more disks besides the DiskOnChip 2000, the DiskOnChip 2000 will appear by default as the last drive, unless it was programmed as the first drive. (Please refer to the DiskOnChip 2000 utilities user manual.)
8. If you want the DiskOnChip 2000 to be bootable:

   a. Copy the operating system files into the DiskOnChip by using the standard DOS command (for example: sys d:).

   b. The DiskOnChip 2000 should be the only disk in the systems or would be configured as the first disk in the system (c:) using the DUPDATE utility.

   DUPDATE D /S: DOC121.EXB /FIRST(set as c:)DUPDATE C /S: DOC121.EXB(set as d:)

C.1.2 Additional information and assistance

1. Visit M-Systems' website at www.m-sys.com where you can find Utilities Manuals, Data Sheets and Application Notes. In addition, you can find the latest DiskOnChip 2000 S/W utilities.
2. Contact your dealer for technical support if you need additional assistance, and have the following information ready:
   - Product name and serial number.
   - Description of your computer hardware (manufacturer, model, attached devices, etc.)
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem.
   - The exact wording of any error messages.